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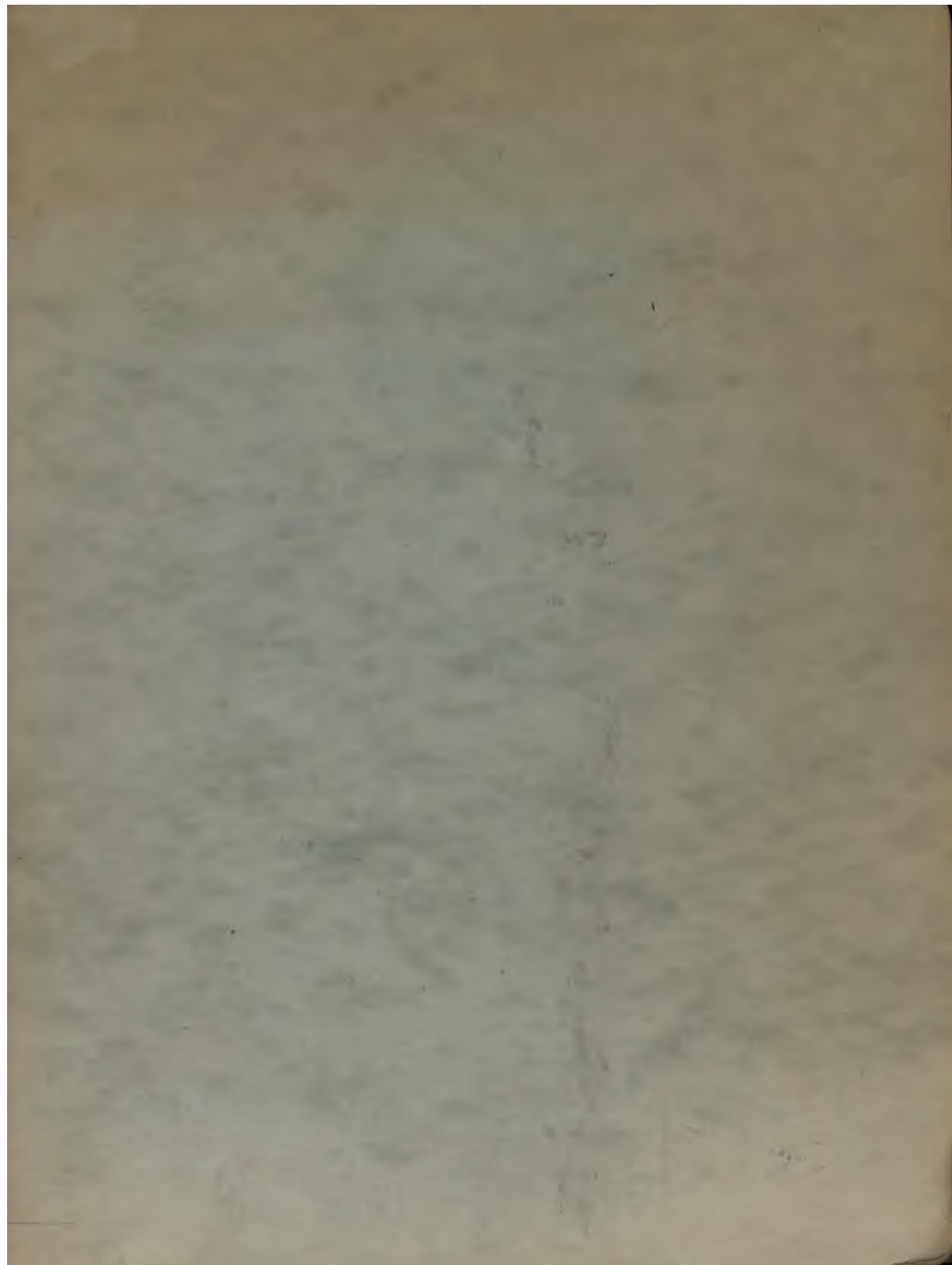
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9.

COSTA RICA

AND

HER FUTURE.

BY

PAUL BIOLLEY,

*Bachelor of Letters, Professor in the College of San José, Costa Rica,
Corresponding Member of the Society of Natural Sciences
of Neuchâtel, Switzerland, and of the Neuchâtel
Geographical Society, Etc., Etc.*

TRANSLATED FROM THE FRENCH

BY

CECIL CHARLES.

Study accompanied by a map, in colors, drawn by F. Montesdeoca.

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1889.

INTRODUCTION.

The name COSTA RICA, to even the European or American possessing a certain degree of culture, suggests ordinarily but the vaguest idea of a little republic situated somewhere on the American continent and producing—if indeed this much be known—a coffee which is quoted rather high on the market. Geographies and encyclopedias give at most the name of the capital of the country and an estimate, often erroneous, of the number of inhabitants. As for special works, these are few and so thickly covered with dust on the library shelves that few persons are able to consult them. Many of these works, besides, were written a good many years ago and supply information wholly insufficient at the present day.

Costa Rica, however, deserves to be known. The prevailing idea in Europe and America as to the Central American republics is that they are sunk in a state of somnolence and inertia, from which nothing can come for a long time yet. They are also represented as the scene of incessant interior wars, and one imagines them as constantly suffering from instability of government and insecurity in general. Nothing is falsier than these suppositions, based on a complete ignorance of the facts. A perusal of the study which we here present to the public will give—we are pleased to believe—a juster idea of Costa Rica.

For several years all has been life and progress; the forward march goes on day by day in a remarkable fashion, and this little country has arrived at a state of culture and civilization that many larger nations might well envy it.

It is now, especially, when the hour has come for crowded European and American cities to overflow the world and when emigration has become a social necessity, that former prejudices should be dissipated. It is but fulfilling a duty to make known in all justice a country worthy of the attention of persons who may seriously consider the matter of seeking a new home for themselves.

We have not sought to offer an untruthful panegyric ; we do not present Costa Rica as an El Dorado or promised land we give but a brief resumé containing the most important elements of an estimate. A residence of several years in the land we depict, the collaboration of persons worthy of all confidence, the pains we have taken to provide ourselves with the latest and most accurate information, the figures or the terms of comparison that we constantly present, will produce, we hope, in the mind of the reader the conviction that our work, although forcedly incomplete, is indeed the expression of the truth.

PAUL BIOLLEY.

TABLE OF CONTENTS.

CHAPTER I.—THE COUNTRY.

	Page
1. Topography	1
2. Orography	8
3. Hydrography	8
4. Climatology	11
5. Natural Products	15
6. Ways	21
7. Post Offices and Telegraph	23
8. Interoceanic Canals	24

CHAPTER II.—THE INHABITANTS.

1. Origin and Customs	26
2. Towns and Villages	30
3. Government	34
4. Public Life	38
5. Public Instruction	40
6. Foreigners	42

CHAPTER III.—LANDS AND CULTURES.

1. Lands	45
2. Principal Cultures	48
3. Special Cultures	53
4. New Cultures	57
5. Natural Forest and Agricultural Wealth	59

CHAPTER IV.—INDUSTRIES.

1. Agricultural Industry	64
2. Coffee Benefitting and Sugar Mills	69
3. Miscellaneous Industries	72
4. Monopolies	75

CHAPTER V.—COMMERCE AND FINANCES.

1. Exportation and Importation	77
2. Financial Situation	80
3. Interior and Exterior Debt.	83
4. Moneys, Weights, and Measures	87

CHAPTER VI.—THE FUTURE 88

COSTA RICA.

CHAPTER I.

THE COUNTRY.

1. *Topography.*—The Republic of Costa Rica is situated in Central America, between Colombia and Nicaragua, between the parallels of 9° and 11° north latitude. The 10° parallel passes through Limon and a little to the north of Puntarenas, the two principal ports of the country—one on the Atlantic, the other on the Pacific—and crosses the central plateau region, where centers the mass of the population.

On the Nicaragua side the River San Juan and the shore of the Lake of Granada as far as the River Sapoá, indicate in a general way the confines of the country. However, by virtue of the treaty of 1858, Nicaragua has a right, on the right-hand shore of river and lake, to a strip of earth a little more than three kilometres (1.86+ mile) in width from the mouth of the Sapoá to a point three (English) miles below Castillo Viejo, an old fort on the San Juan.

The validity of this treaty, long contested, has been definitively established as the result of an arbitral decision of the President of the United States. To the west, from the Sapoá river to the Pacific, the demarcation is indicated by a straight line terminating in the center of the Bay of Salinas.

On the south the question of limits is not yet fully settled. Colombia refuses to admit as definitive the provisional line starting from Punta Burica, on the Pacific, and terminating in the island called Escudo de Veragua, in the Atlantic, and lays claim to a portion of territory which Costa Rica has always considered as her own. The late King of Spain, Alfonso XII, as arbitrator, was to have decided the ques-

tion. His death prevented the pronouncing of a decision, and *adhuc sub judice lis est*. There is, nevertheless, good reason to believe that Costa Rica will be recognized as rightful possessor of the disputed lands. The obviousness of her rights has been admirably demonstrated by the important publications of her minister in Europe, Don Manuel M. de Peralta.*

The *coasts* on the Atlantic are united and of coral formation; those on the Pacific, on the other hand, are cut up and sandy. The extent of the former may be estimated at 280 kilometres (112 miles); that of the latter at more than twice as many.

The principal peninsulas, all on the Pacific, are those of the Golfo Dulce and of Nicoya, separated by the *gulfs*, having the same names, from the mainland. The Gulf of Nicoya, the best known, is full of *islands*. That of Chira, rather important as to extent, and that of San Lucas, which serves as a place of deportation, deserve especial mention. The little Isle of Coco, situated 180 miles from land, has for some time past been similarly occupied. Formerly it served as a place of refuge for the famous buccaneers.

The Atlantic coast does not form any peninsulas proper, and has but one little island, that of Uvita, opposite Port Limon.

The area of the country is 51,760 square kilometres (20,704 square miles†)—that is to say, equal to twice that of the peninsula of Jutland and greater by one-fifth than that of Switzerland. Let us say at once that Costa Rica has hardly more than 200,000 population, which gives an almost exact

* Don Manuel M. de Peralta. *Costa Rica, Nicaragua, y Panamá en el siglo XVI*. Paris, Ferrer, 1883. *Costa Rica y Colombia de 1573 á 1881*. Paris, Leroux, 1886. Consult also volumes IV and V of *Documentos para la Historia de Costa Rica*. Paris, Dupont, 1886; published by Don León Fernández; and, for the question of arbitration between Nicaragua and Costa Rica, the Report and Reply to the Allegations of Nicaragua, presented by Don Pedro Perez Zeledón to the President of the United States.

† Lux. *Geographischer Handweiser*. One sometimes finds 59,570 square kilometres given, but nothing would appear to justify this overestimate.

proportion of four inhabitants to the square kilometre (or $2\frac{1}{2}$ to the square mile).

2. *Orography*.—The study of the mountains of Costa Rica is yet to be made in its entirety. Frantzius, Oersted, Hoffmann, Seebach, Scherzer, and Wagner and Gabb have studied some portions of the country, but their works do not suffice to present a clear idea of the Costa Rican orographic system. We are indebted to Prof. H. Pittier for most of the general points which are to follow.* It is evident at the start that one must reject the old conception of a single cordillera extending throughout all of America, from Behring Strait to the farthest limits of Patagonia. It is proven, indeed, that the mountains of Central America are of more recent formation than the chains of the two great continents. Without wishing to go too much into details, we will add that it appears equally natural to consider the mountain system which extends between the isthmuses of Brito and Panamá, and to which belong the mountains of Costa Rica, as forming a distinct group in the *ensemble* of the Central American cordilleras.

The chains composing the Costa Rican group extend almost from the Peak of Róvalo, situated a short distance from the Colombian frontier, to the mountains in the neighborhood of the Bay of Salinas and the Nicaraguan town of Rivas.

They appear to be composed of volcanic or, at least, eruptive masses, surrounded by sedimentary formations of greater or less height and development, according to the locality. Although the geology of the country is little known, the presence of sedimentary deposits is proven by the lime quarries and the fossils which are discovered in various localities.

The Costa Rican system may be divided into two distinct groups, separated by the valleys of the Reventazon and the Rio Grande. On the northwest side extends the volcanic

* Bulletin of the Meteorological Institute, year 1888.

cordillera; on the southeast, an *ensemble* of mountains which may be designated the cordillera of Talamanca.

At a remote epoch an arm of the sea separated these two groups. The geological study of the valley of Reventazon and of the sub-stratum of the plateau cannot fail to confirm one day this assertion.

However it may be, it is certain that the most important chain is the volcanic cordillera. This chain, formed entirely of eruptive rocks, is divided in two great groups. The first begins at the northeast frontier and extends southeast almost in a direct line to terminate in the Monte de Aguacate, rich in gold mines. Its principal volcanic summits are Orosi, Rincon de la Vieja, Miravalles, and Tenorio, all more or less active volcanoes. Following come the Cerro de Tilaran mountain group, little known, and the porphyritic mass of the Monte de Aguacate, which closes the central plateau of the western side. The second group forms three massives: that of Poás, which comprises the volcano and the "cerros" of that name; that of Barba, separated from the preceding by the depression of Desengaño; then, a little to the southeast and beyond the deep cut of La Palma, that of Irazú, composed of two summits, Irazú and Turialba.

All these *volcanoes*, with the exception of Barba, which appears completely extinct, still present signs of activity. From time to time are witnessed—especially at the close and beginning of the rainy season—little eruptions, accompanied by movements of the earth of no great importance. The *earthquakes* have, nevertheless, though at rare intervals, caused disaster in the country. Among the more recent occurrences may be cited the destruction of the city of Cartago, at the foot of Irazú, in 1841.

We may also say that a strong shock, resulting probably from the redoubled activity of Poás and Irazú, caused serious damage over all the central plateau at the end of December of the past year.

Generally speaking, however, one may affirm that violent movements of the earth are rare in Costa Rica, and in no-

wise recall the cataclysms which history has recorded of the Andean region of South America or of the northern part of Central America.

The aspect of the volcanoes of Costa Rica is of the greatest magnificence. Seen from the plateau, which itself rises to a height of some 1,000 metres (3,000 feet), they appear as mountains of comparatively little elevation. They are cut-off domes, wooded, when a certain height is reached, to their summits. Nothing about them would lead one to suppose them volcanoes, were it not sometimes for the line of an old opening still visible on the mountain's top. The craters in actual activity are, as a general thing, on the north of the volcanic chain, and there are vapors far from light which rise at times from Turrialba—smoky plumes which certain travelers have described in their love of the picturesque.

The ascent of Irazú, the highest peak of the volcanic chain (3,414 metres, or 11,103 feet*), is a journey which any one may easily make. From Cartago, which lies at the foot of the mountain, the horses arrive at the very brink of the volcano in six hours' time.

When the weather is clear the beauty of the view amply compensates for the slight fatigue of the journey.

One has at first before his eyes an immense rocky amphitheatre over 3,000 feet in diameter. It is one of the old openings of the volcano. At the bottom of this first crater, overrun with water during a long period of calm, two others, smaller, have made their successive appearance.

The oldest of these two funnels of recent formation is already filled with grass and bushes. The other still presents three chimneys, two of which are partly filled up. The third, but a short time since, was still exhaling sulphurous vapors. To-day, however, it gives no sign of activity.

From the peak of Irazú the traveler, after having admired the craters, gazes with delight on the far-distant most magnificent of panoramas. Turn whichever way he may, it is

* Bulletin of the Meteorological Institute, year 1888.

an enchantment of the eye born of the contemplation of green hills where variety of cultivation places different hues, of ravishing valleys, of rich plateau watered by rivers that wander at caprice, and finally of sombre masses of mighty mountains whose farthest summits die away in the intense azure of the heavens. When the atmosphere is very pure one can see *both oceans*, the Atlantic and the Pacific, half blent with the line of horizon. If the weather be foggy, the view is less smiling but of equal grandeur. At every gust of wind which sweeps the mists at frequent intervals, one has before him a sea of haze whose foamy waves beat against the dark sides of the mountains.

One thing: It is better not to pass the night on the summit of the volcano, for, at dawn, the thermometer sometimes falls to zero centigrade (32° F.) and lower.

Irazú constantly gives signs of activity on the northern slope, where the ground is marked with fumaroles and where springs of boiling water rise. However, as it is difficult to approach this region, the greater number of visitors go away from the volcano without a suspicion that the giant but slumbers, and that somewhere on his flanks, one may feel his powerful breathing.

The Volcano of Turialba, near neighbor of Irazú and situated a little to the northeast, has been for a long time considered inaccessible.

Von Seebach was the first scholar to arrive anywhere near the crater, in 1864. Unfortunately, a violent eruption of smoke and stones prevented him from climbing the superior cone. At the present day the ascent is made easily, thanks to a road that two great land proprietors have opened up the flanks of the mountain. Professor H. Pittier has thus been able to give a more exact description of it than any others published thus far, and to measure the altitude (3,358 metres,* about 10,980 feet).

Barba (2,833 metres, or 9,061 feet) and Poás (2,644 metres, or 8,643 feet) are less easy of access, owing to the lack of

* Bulletin of the Meteorological Institute, year 1888.

roads. One arrives at their respective summits only by carving himself a passage, with great blows of the *machete*, through the trees and bushes that form the undergrowth of the great forests. Contrary to what has been affirmed, one finds on the slopes of these volcanoes two coniferous species. On the summit of Poás there is a little lake whose blue waters sleep peacefully and bathe enchanting banks. It is an old crater. Quite near is seen another, at whose bottom muddy water strongly charged with sulphuric acid is constantly boiling. When the volcano is in one of its periods of great activity a dark-hued liquid column rises at moments from the sheet of water, accompanied by great ebullitions of vapor, then falls back heavily, while from the depths of the crater issue heavy and prolonged rumblings. The eruption of this geyser is one of the finest spectacles that one could contemplate, only the phenomenon does not always reproduce itself with the same intensity. It was after the strong earthquake shock of last year that it was best witnessed, the water column having reached at that time a height of 230 feet.

It would convey a mistaken idea of the mountains of which we have just spoken to represent them as completely wooded. The forests hardly begin before a height of 6,000 feet has been reached, and even at this altitude potatoes and corn are cultivated. The government has recently taken measures against the cutting of timber on the slopes of the volcanic cordillera. This extensive tree-cutting would have changed in a short time the climacteric conditions of the most thickly inhabited part of the country.

The smaller chains which skirt the central plateau on the south are known by the names of Cerro Turubales, Cerro Puriscal, and Cerro de la Candelaria. Farther east, in regions still uncultivated and almost deserted, are found the Cerro de las Cruces and the mountains of Dota, which turn southward and are continued in the cordillera of Talamanca.

The lesser chain, set toward the east of the plateau, of the first groups which we have cited, are covered to their peaks

with plantations of maize, and are of mixed formation, partly eruptive, partly sedimentary.

Porphyry is found on their summits, but their slopes are formed of calcareous rocks, which are employed to manufacture lime. The mountains of Dota and of Talamanca, little explored, include some important peaks: La Laguna, the Cerro Chiripó, the Monte Lyon, the Ujum, the Pico Blanco or Kamuk (9,528 feet*), the Róvalo. None of these peaks should be considered as volcanic if one refer to Gabb, the principal explorer of this region. Doubt exists on the subject of the mountain of Dota, the center of which should be occupied by a crater lake, according to those who have made the ascent. This mountain, besides, seen from Irazú, presents the aspect of a volcanic peak.

Costa Rica has been called the Switzerland of Central America, because of the picturesqueness of the mountains surrounding its plateau, especially those of the volcanic chain.

It is Switzerland, if you like, but Jurassic Switzerland, for the Costa Rican landscapes have naught of the imposing and severe beauty of the Alpine regions. The mountains of Jura, with their flat and rounded summits, their sides wooded and covered with green pasturage, give a better idea.

The usual temperature and the sub-tropical vegetation, however, differentiate the aspects to such a point that the comparison could not be exact.

3. *Hydrography*.—The fluvial system of Costa Rica comprehends three slopes: the North slope, whose waters are received by the Lake of Granada and the San Juan, the Pacific, and the Atlantic slopes.†

It is the water-courses of the north slope that are of great-

* I. W. Gabb.

† The San Juan emptying into the Atlantic, it is clear that, properly speaking, there exist but two slopes, those of the two oceans. We have only admitted a north slope because this permitted us to establish a clearer division of the Costa Rica water-ways.

est importance as to volume of water and extent of basin. The navigation of these alone will come to present important advantages for commerce when the immense region which they cross shall have been improved. This region is, even to-day, almost unexplored. After having mentioned the Sapoá, of which we have spoken in connection with the subject of frontiers, and the Rio Frio, which traverses the little-known country of the Guatuso Indians and empties into the Lake of Granada, at the very starting point of the San Juan, we shall distinguish on this northern slope three great arteries—the San Carlos, the Sarapiquí, and the Tortuguero or Colorado.

The San Carlos empties into the San Juan about midway its course. It is navigable for two-thirds of its length for boats drawing little water. Its two great affluents on the left, the Arenal and the Peñas Blancas, are also navigable part of the way. These rivers would lend themselves to navigation much more easily if care were taken to relieve them of the quantity of tree-trunks which obstruct them; such as they are, they already render important services. Their banks are formed of exceptionally fertile soil, and the owners of plantations there always prefer the water-route to the longer way by land, which is almost impracticable during certain months of the year. Beside the affluents already cited the San Carlos receives on its right bank and in the upper part of its course the Rivers Pejë, Platanar, San Rafael, Cooper, and, much lower down, the River Tres Amigos; this last navigable part way.

The Sarapiquí, which comes down from the mountain of Barba, is the most important affluent of the San Juan. One ascends this as far as or above the *Muelle* (landing), and for a long time it formed the continuation of the road to the north, formerly the most frequented in going from the plateau central to the Atlantic. One of its affluents on the left, the Toro Amarillo, which comes from Poás, is navigable part way for smaller vessels. On the same side the Sarapiquí receives the Rivers Sardinal and Masaya. The affluents on the right are

the Rivers Puerto Viejo, Sucio, and San José; the Sucio which has its rise in Irazú, sends one of its branches to the east before casting itself into the Sarapiquí and rolls along ferruginous waters.

The entire region on the east of the Sarapiquí is so poorly known, so cut up by lagoons and natural canals to mingle their waters, that for a long time the Colorado or Tortuguero has been considered as an arm of the River San Juan, and even to-day exact information is lacking as to the hydrography of this part of Costa Rica. The opinion of several persons worthy of credence is, however, that the Colorado is nothing else than the mouth of the Costa Rican river, which is called Tortuguero in the upper part of its course. The San Juan empties there to-day, after having almost abandoned its old bed, the San Juanillo. One would not wish, however, to state as positive fact an opinion which is based only on the information of the few individuals who have explored the delta covering with its complicated network this portion of the country.

Into the Atlantic there fall the Reventazon, which has its rise at the south of Cartago, and whose valley places in communication the plateau central and the Atlantic; the Pacuare river, and the River Matina. The Reventazon is augmented at some distance from the sea by the River Parismina. All along the Atlantic, from the mouth of the Matina to the Colorado, extends a series of lagoons which render the coast marshy and almost uninhabitable. Some thought has been given to the canalization of these lagoons in order to devote them to the exploitation of the cocoa tree which abounds here, but the projected work has never yet been put into execution.

From the mountains of Talamanca descend two great rivers—the Teliri or Sicsola, which comes from Cerro Chiripo, according to some persons, and from Dota, according to others, and the Tilorio or Changuinola. Both are navigable for small craft in the interior.

On the Pacific side we find at the north the Tempisque,

which empties into the bottom of the Gulf of Nicoya and which receives as its principal affluent the river of Las Piedras. These two are in part navigable. Further south and also emptying into the Gulf of Nicoya are found the Barranca and the Rio Grande de Tárcoles, the collecting basin of which comprises the central plateau. This part of the country is very well watered by a number of little streams descending either from the volcanic cordillera or the cerros of Puriscal and Candelaria and emptying into the Tiribi, affluent of the Rio Grande.*

Properly speaking, the Rio Grande de Pirris and the Rio Grande de Térraba flow into the Pacific, as well as a multitude of lesser streams watering a country of scant population.

As in all tropical countries, the rivers of Costa Rica are subject to sudden rises during the rainy season—rises often producing inundation of their shores, carrying away the most solid bridges, and in certain localities causing veritable disaster.

It is on the Atlantic side especially that the rivers have this torrent-like character. Here, as everywhere else, notwithstanding, the abundance of waters should be considered as one of the greatest blessings, since it is to this that the country owes its admirable fertility.

4. *Climatology*.—Costa Rica, like all the Central American countries, is divided in respect of climate in three vertical zones.

The "hot lands" is the name given the low region which reaches from sea-level to the altitude of 3,000 feet, and extends along the two coasts and the shores of the San Juan. The mean annual temperature of this zone is from 22° to 28° centigrade (72° to 82° Fahr.). It must be noted that the

* In considering the general course of the stream called Rio Grande de Tárcoles, the Tiribi is evidently the main stream and the Rio Grande the affluent. The confusion, doubtless, proceeds from the resemblance between the bulk of the waters of the two.

heat of the Pacific side is greater than that of the Atlantic. The second region comprehends the *temperate lands*, which lie between 3,000 and 7,500 feet altitude and have a temperature of 14° to 20° centigrade (57° to 68° Fahr.). These enjoy a mild and healthful climate, and the greater part of the population is gathered here.

Finally, the *cold lands* are found above 7,500 feet and are formed by the summits of the highest mountains. The difference between the temperature of day-time and night-time is felt here most keenly. Not infrequently the ground appears covered with hoar-frost in the morning; snow, however, is extremely rare.

We shall naturally have to return several times to this division of zones. For the moment, we will limit ourselves to saying that no one of them is unhealthy—not even that of the hot lands, where the trade winds purify the air and prevent the development of endemic coast fevers. The foreigner, after a preliminary acclimatization, in submitting himself to which he is prudent, by dwelling for some time in the temperate regions of the country, can perfectly well inhabit the littoral of either Pacific or Atlantic if he be reasonably careful to avoid all excesses.

We may note, however, some causes of unhealthfulness.

Several great rivers of the north slope present this peculiarity: that while their left banks are formed of dry lands free from marshes, their right banks present a succession of lagoons and localities frequently inundated, rendering them often unhealthful.

The extensive clearing of lands sometimes brings with it during the first few years a little malaria; nevertheless, permanent fever is only found in the regions of marshes, and it is but just to observe that they are usually due to errors in diet—especially to the use of the banana—rather than to miasma floating in the air.

As to the insalubrity of some portions of the plateau, the cities in particular at certain seasons of the year, it may be said that this is but relative and always incidental. If

greater care were devoted to suppressing the cause of miasmatic emanations, in accordance with hygienic principles, to the construction of houses and the cleanliness of streets; if greater importance were attached to the choice of drinking water; if, in short, a more rational regime were observed, a great deal of sickness would certainly be avoided, especially during the rainy season.

It will not be superfluous in this connection, to call attention to the fact that at the time of the coffee harvest the water of the rivers is not only employed as a motive power to work the machinery, but also to wash the berry and to free it, after a slight fermentation, of its sugary pulp. It is obvious that it should thus be absolutely unfit for drinking, and it is not astonishing that the people of the country, having used it without precautions, should frequently be affected with dysentery.

The *mortality* of 1888 reached the number of 5,110, giving an average of 1 death to every 39 inhabitants.* This excessive proportion loses much importance when one glances at the following table:

Mortality of 1888.

Children under 10 years	3,066
From 10 to 20 "	237
From 20 to 40 "	795
From 40 to 60 "	645
Over 60 years	367
 Total	 5,110

3,066 children under 10 years—that is to say, 60% of the

* In all questions of statistics consult the six volumes of "El Anuario Estadística," 1883, 1884, 1885, 1886, 1887, and 1888, compiled with utmost care by the Bureau of Statistics of the Republic.

Reference should also be made to "The Republic of Costa Rica," by Joaquín Bernardo Calvo, translated and edited by L. Tyner. Rand, McNally & Co., publishers, Chicago, U. S. A.

whole number of deaths! A considerable part of this abnormal mortality must be attributed to a habit which the people of the country have of letting their children run barefooted and poorly clad in all weathers. This unfortunate custom disappears accordingly as the laws of hygiene are better understood; in no case should it be considered as a consequence of poverty, the people, as a rule, being unacquainted with want.*

The same statistics show, among the 367 deaths of persons over 60, 36 nonagenarians and 10 centenarians; and, although the year appear exceptional in this respect, one may assert that cases of longevity are decidedly frequent.

The *seasons*, well defined and characterized by the fall or the absence of rain, are the *verano* or dry season, which begins in December to end in April or May, and the *invierno* or rainy season, which lasts from the month of May to the end of November. During the Costa Rican *invierno*, which corresponds to the summer and autumn of the north temperate zone, the air, although rarely nebulous, is almost constantly saturated with vapor, and to this is owing its, at times, remarkable transparency. During the *verano*, on the contrary, the air, which is almost never cleansed by rain, becomes loaded with dust and is extremely dry during the hottest hours of the day.

The *rain-fall* stands in direct relation to the system of *winds*. The northeast trade-wind loses its humidity in ascending the slopes of the cordillera tending eastward on the Atlantic side; it is thus a dry wind, which blows from November to March across the plateau. From April to October, one has the monsoon of the southwest as dominant wind on the Pacific side, where—we may observe in this connection—it rains less than on that of the Atlantic. This

*The country people are so accustomed to their children dying at an early age that it is the custom among them on each occasion of such a death to expose the little body, dressed in its best finery, in the principal room of the house, and to invite the neighbors and friends to a little fête, in which the parents are the first to take part. It is what is called an *angelito*.

wind, meeting no mountains high enough to condense the water vapor with which it is charged, arrives at the plateau central still saturated with moisture, and thus produces the abundant rains which characterize the *invierno*. The *temporales* are rare in Costa Rica—that is to say, it almost never rains continuously for several days. During all the *invierno*, except in the month of October, the wettest period of the year, one can count on sunshiny mornings. It is hardly before afternoon, from 2 o'clock until 4, that the *aguacero* falls, which lasts but a short time, but sometimes is of excessive violence, as much as 60 millimetres of water having been caught in the space of an hour.

The study of the climatology of Costa Rica has made great progress of late years, thanks to the intelligent attention of the government. The meteorological institute already existing has just been reorganized into a physico-geographical institute destined to render the greatest service to science and to the country itself, since scientific exploration of the Republic occupies an important place in the programme of its work. This institute has been placed under the direction of a most competent man, Prof. H. Pittier, to whom, as has already been observed, we are indebted for many of the preceding points.

5. *Natural Products*.—Despite the number of special works proceeding from the pens of distinguished scholars, the natural products of Costa Rica are as yet little known. They have not been, as a whole, the object of study, and we cannot give here more than an incomplete and barren naming of the principal among them. We may add, however, that for some years the government has made notable efforts to encourage scientific research, with the object of rendering them better appreciated.

The greater part of the works published abroad by naturalists or engineers who have visited Costa Rica have been translated and printed through its efforts.* A national ex-

* See first three volumes of the "Coleccion de documentos para la Historia de Costa Rica," published by Don Leon Fernandez.

position, opened to the public the 15th of September, 1886, revealed a great variety of the country's products. The greater part of these products have formed the nucleus of a national museum, which is being added to day by day.*

Mineral Kingdom.—Of all the metals gold is the only one which has been seriously exploited. The *Monte Aguacate* contains the principal mines of this precious metal in the district called "Ciruelitas." The production has not been great until of late, from the lack of labor; but the quite recent placing of new and powerful machinery, which has not cost less than \$100,000, will permit of serious exploitation in the near future. The proprietors of the only mine, "La Trinidad," count upon a yield of at least \$30,000 per month for the coming year. For a long time very rich gold mines were believed to exist in Talamanca, in the basin of the river Changuinola, formerly called Estrella. The works of Dr. Frantzius† have made it appear very clear that this belief was the result of a confusion of names.

Besides gold, the principal metals whose existence has been established beyond doubt in Costa Rica, but which have not been seriously exploited, are: iron in abundance; copper, rich mines of which exist in the mountains of Candelaria; argentiferous lead, and quicksilver.

Among other mineral products should be cited sulphur, kaolin, lignite, plastic argil, limestone, marble, gypsum, pozzalana, and alum, all unexploited excepting the limestone.

Almost everywhere throughout the country mineral and thermal waters are found.‡ The most celebrated are those

* The National Museum, at present connected with the Physico-Geographical Institute, has already published a volume of annals, which contains some interesting works on the natural history of the country.

† "*Acerca del verdadero sitio de las ricas minas de Tisingal y Estrella, buscadas sin resultado en Costa Rica.*" Estudio por el Dr. A. von Frantzius, traducido del aleman. *Doc. para la Historia de Costa Rica.* Pub. por Don Leon Fernandez. Tomo II, p. 23.

‡ See in this connection the study of Dr. Frantzius, "*Die warmen Mineral quelle in Costa Rica,*" published in the "*Neues Jahrbuch für Mineralogie, Geologie und Paläontologie.*" V. Heft, p. 496-510. Stuttgart, 1878.

of Agua Caliente, about five miles from the city of Cartago, for the exploitation of which a stock company has been formed, under the name of the "Bella Vista Company." This society is working actively for the construction of a bathing establishment responding to modern exigencies and of a hotel affording all desirable comforts to invalids or travelers. The analysis of the water of Agua Caliente made by the chemist, Dr. C. F. Chandler, of New York, in 1887, gave the following results:

Sodium chloride	61.2922
Bicarb. lithium	Traces
" sodium	15.1568
" magnesium	13.0165
" calcium	56.0627
" barium	0.2624
" strontium	Traces
" iron	1.3588
" copper	Traces
" manganese	Traces
Sulphate potassium	2.5775
" sodium	37.7258
Phosphate "	0.1108
Biborate "	1.7669
Arsenite "	Traces
Alumina "	0.1166
Silica "	3.6157
Organic matter	Traces

Total 193.0627

(Signed)

C. F. CHANDLER, *Ph. D.*

The figures given represent grains, and the analysis was made from the quantity of water to a gallon of the United States, which contains 231 cubic inches. There exist mineral springs in many other localities. Those most resembling Agua Caliente are those of Orosi, in the same neigh-

borhood as the former, and those of Salitral, near San José.

Fauna.—The fauna of Costa Rica owes its extreme richness to the intermediate position of the country between the two Americas. Among the *mammifers** may be named the lynx and the puma, called also jaguar and cougar (the American tiger and lion), the ocelot (another feline), the coyote, a great variety of monkeys, many rodents, whose meat is savory; the peccary, the tapir, whose hide, the thickest known, is of great value; several species of opossum, the deer, the fallow deer, the armadillo, some bats (vampires and dangerous to cattle), and, finally, the curious lamentein, which inhabits the lagoons of the eastern side of the country.

The forests abound with birds of marvelous beauty, among which must be mentioned the superb quetzal with metal-green plumage, macaws of various colors, toucans with enormous beaks, quantities of humming birds, jewel-winged; many little singing birds; and, in a different line, ring-doves, turkeys, and partridges of delicate taste. Birds of prey are numerous. The most common is the zopilote, species of vulture, which renders important services in clearing away the refuse of the cities.

Venomous serpents are only found in a small number on the central plateau, but they swarm in the marshy regions of the north and in certain localities on the Pacific coast. Cases of death from their bites are, however, rare.

Crocodiles abound in the Tempisque river, and on the Atlantic coast enormous turtles are found.

The rivers of the interior of the country produce a large

*For *mammifers* consult the work of Dr. v. Frantzius; for *birds*, the catalogues and descriptions of George N. Lawrence, Dr. Frantzius, and of the Costa Rica naturalist, José C. Zeledon, all published in the collection of "Documentos para la historia de Costa Rica," by Don Leon Fernandez; for *reptiles* see the work of E. D. Cope, based chiefly on the researches of Dr. Wm. M. Gabb in his explorations of the province of Talamanca. The most complete work on the fauna of Costa Rica and of Central America in general is the "Central American Biology," now in course of publication.

fish called "*bobo*," whose meat is greatly liked, and in the river San Juan there is an excellent species of salmon. Unfortunately, fishing regulations are little observed, and an immense quantity of fish is destroyed by use of dynamite. The establishment of pisciculture for the restocking of the streams is a desideratum of the future.

Mosquitoes, one of the great plagues of tropical countries, are comparatively rare in Costa Rica. Even on the hot plains of the north one can sleep the greater part of the year without mosquito bars.

The native bee produces a honey having exciting properties and a black, aromatic wax. The introduction of Italian bees would be of benefit to the country.

Flora.—The vegetation is everywhere of exceeding vigor and variety, thanks to the fertile soil, the abundance of water, and the diversity of climate. This exuberance is found in the temperate regions as well as on the hot lands, and the traveler arriving for the first time in the country may expect to find at a height of 6,000 feet, on the sides of the volcanic cordillera, the luxuriant flora which he has admired a short distance from the Atlantic or Pacific coast.

The species are changed, but everywhere it is a confusion of giant trees, some having branches and leafage in profusion, others with smooth trunks like elegant columns. Everywhere are seen, swinging from their very tops in long strings, the flexible stems of a multitude of plants of various families, to which it is the custom to give the generic name of bind-weed. The trunks, branches, and even the leafage are covered with a multitude of epiphytes; silver lichens; purple or emerald ferns, with notched fronds; bromeliaceæ, with thick leaves marbled with livid or rusty spots; orchids, with curiously divided corolla and painted with the richest hues; aroides, in short, with spatha of purple or immaculate whiteness. Everywhere there is underbrush, an impenetrable mass of bushes, often thorny, of reeds, which obstruct the passage, and of climbing plants, whose flowers, solitary

or in clusters, but always brilliant, thrust their clear note upon the demi-obscurity of the virgin forest.

It is only at the present day that this admirable flora is beginning to be studied, and considerable time will be required before the elements of it may be completely understood.*

We shall return to the principal forest species and shall consider the natural agricultural products in the chapter treating of "Lands and Improvements," limiting ourselves at present to the mere indication of the general features of vegetation.

It may be said that the flora of Costa Rica forms the connecting link between that of North America and that of the Andes. Apart from its endemical species it presents an infinitude of classes and species belonging to both these regions, and if the Andean character predominate it is because Costa Rica was united to South America long before being joined to Mexico.

The tropical flora shows itself in all its splendor on the coasts, while the vegetation of the volcanic summits takes a markedly sub-alpine character. Between these two extremes one observes on the usually cultivated plateaux of the interior the greatest diversity of families, genuses, and species.

In returning to the division of zones, of which we have already spoken, we may say that the hot lands are regions of virgin forests, and that there are found in particular the palms, the arborescent ferns, the vanilla, the caoutchouc, the cacao, and an infinite variety of trees, giving ornamental and dye-woods, such as mahogany, cedar (gen. *Cedrela*, fam. of *Cedrelaceæ*), cocobola, guayacan, mora, Brazil wood, etc., etc.

The temperate lands are characterized by the numerous "cultures," of which may be cited the coffee, sugar-cane, and bananas in the warmest localities; corn, potatoes, and beans

* We may cite among botanists who have contributed to the study of the flora of Costa Rica: Oersted, Hoffmann, Polakowsky, Kunze, Warscewicz, Wendland, and Pittier.

in the higher regions, where the fields are of vast extent. In less elevated parts there abound fruit trees, such as the *aguacate*, the native plum tree, the orange tree, the mangle, and a host of others. In the forests are found many woods for building, the most of which are known only by their native name, such as the cedar (*cedrela*), the *nnambar*, the *guachipelin*, the *ira*, the *quizarra*, the *ronron*, etc.

Above 6,000 feet begins the region of oaks, which become rarer and diminish in vigor in the cold lands. These have as principal vegetation at the tops of the volcanoes myrtles, more or less stunted, and with a mixing of species, presenting, as we have already stated, a very pronounced sub-alpine character.

6. *Routes*.—Costa Rica has thus far only certain fragments of a railroad, which is intended to unite the Atlantic to the Pacific, while passing through the principal towns of the plateau central.

The parts now constructed and exploited are the following :

	Miles.
1. From Port Limon, on the Atlantic, to Carrillo, a small settlement on the river Sucio, at the foot of Irazú	70
2. From Cartago to Alajuela, on the plateau central, passing through San José, capital of the Republic	26½
3. From Puntarenas, on the Pacific, to Esparita, at the foot of Monte de Aguacate	14
Total	110½

In all, then, 110½ miles of railway, which renders important service, either in permitting quick and easy connections between the principal neighborhoods of the country's center or in favoring the commerce of the two coasts.

A line of especial importance is in process of construction,

and will probably be in working order in the course of the coming year. This new road starts from Cartago and follows the valley of the Reventazon to connect with the line already existing between Limon and Carrillo. By this, San José and the plateau central will be placed in direct communication with the Atlantic, and therefrom will result a veritable economic revolution in the country by the diminution of expense and time required for transportation from the interior to the coast or *vice versa*, and the avoidance of difficulties in travel, often serious, especially during the rainy season.

Another railway project has been made a subject of study of late—the question of connecting the Limon line with a point on the River San Juan, passing through the region of the great rivers of the north. This new road, once constructed, will obtain some considerable advantages for the two Republics of Nicaragua and Costa Rica in putting them in direct communication. It will permit also the improvement of an enormous amount of very fertile land, whose production amounts to almost nothing at present by reason of its inaccessibility.

The exploitation or the construction of all these lines of railway is, with the exception of the little branch of the Pacific, in the hands of an English company, whose representative, Mr. M. C. Keith, is the type of those American impresarios so remarkable for their intelligence, their activity, and their faith in the success of most difficult undertakings.

The highroads—called *caminos reales*—in Costa Rica are maintained at public expense. This maintenance is exceedingly difficult because of the continuous rains of the *invierno*, and also because of the solid wooden wheels of the chariots, whose narrow edges cut into the ground wherever they pass. The most frequented of the highroads is the main route from San José to Puntarenas, which passes the Monte de Aguacate and by a point from which one enjoys one of the most panoramic views in the world, looking over the gulf sown with islands and the peninsula of Nicoya.

Beside the highroads, there are *los caminos de tierra*, roads leading from the plateau to the interior of the country. One of these, passing over the hill of La Palma, goes from San José to Carrillo, where terminates the railway line from Limon, and is at present the direct road for reaching the Atlantic. We have already mentioned that some years since one traveled by the Sarapiquí road, which, passing through the depression of Desengaño, between Barba and Póas, leads to the river. Other roads lead to the lowlands of San Carlos, to Guanacaste, to Talamanca, and to the region of Térraba. They are all more or less in good condition, according to the season and the lands which they cross. As a general thing, they are only fit for horseback travel, being unsuited for the chariots.

7. *Post Office and Telegraph.*—The postal service is very satisfactorily organized. The central office is at San José, and the smallest village of the plateau is connected with it, usually by means of mounted couriers, who make several leagues daily to carry the correspondence to its destination. Some of the couriers go even to San Carlos, to Talamanca and to Boruca, and are often weeks in making their trips.

The foreign mails are attended to with ease and frequency. Several departures and arrivals are counted weekly by the way of Panamá, Colón, San Francisco, New Orleans, or New York. The correspondence taking the latter two routes may arrive in Europe in less than twenty days; that which leaves France by the way of Southampton requires twenty-five days to reach San José, and that leaving the ports of Bordeaux and St. Nazaire, to arrive first at Colón, then Panamá, then Puntarenas, reaches its destination in thirty to forty days, according to the coincidence of arrivals and departures of vessels.*

The installation of the telegraph in Costa Rica dates back

* In 1887 the postal movement, including both foreign and domestic matter, reached 2,437,639 pieces, of which 663,444 were letters and 1,411,602 printed matter. Let us remember that Costa Rica has 200,000 inhabitants.

a long time. The number of offices increases every year, and the system comprises already over 600 miles of wire. The transmission of telegrams for foreign countries is made by land as far as San Juan del Sur, a Nicaragua Pacific port.

The government, nevertheless, has lately signed a contract with a company which shall undertake the laying of a submarine cable on the Atlantic coast, and there is every reason to believe that very shortly Costa Rica will be in direct cable communication with the United States and Europe by a point on its eastern coast.*

S. Eventual Interoceanic Canals.—That which renders the situation of Costa Rica exceedingly favorable, and which will certainly one day permit her to consider herself as privileged among nations, is that she occupies exactly the territory comprised between the two great interoceanic canals which are most likely to be opened eventually to the commerce of the world.

Although the Republic does not touch directly on the Panamá canal, its commerce, which takes to a considerable extent the isthmus route, will naturally gain by the conclusion of the vast work in which France has taken so important a part. After having consumed so many human lives and so much capital—if we may be permitted to say so in passing—the work of the opening has not been abandoned, though even but temporarily, without this confession of failure having struck sadness to the hearts of all men of progress and of faith in the future of science and human might.

A contract was concluded in the month of July of the past year between the Government of Costa Rica and Mr. A. G. Menocal, representing the Nicaragua Canal Company. This contract sets forth the rights of the Republic to part of the waters and territory which the projected canal by the River San Juan and the Lake of Nicaragua would utilize,

* Contract. V. Cuenca Creus, Gaceta Oficial, March 29, 1889.

and makes clear the concessions which the government would grant the company upon the execution of the work, declared of public benefit. As the canal project through Central America has as yet had no beginning, except of preliminary surveys, we shall not linger over the terms of the contract.

It is hardly necessary to call attention to the immense advantages which Costa Rica will derive from the establishment of the Menocal canal. The latter would place it, indeed, directly upon the line of one of the greatest commercial routes of the world.

We may add that the Government of Nicaragua has raised doubts as to the rights which Costa Rica may have to celebrate a contract with the canal company, and has laid claim to exclusive possession of the waters of the San Juan river. The question has been submitted for arbitration to the President of the United States and will be very soon decided.

One can hardly doubt what the verdict will be when one remembers that the territory of Costa Rica touches on the San Juan, starting from three miles below Fort Castillo Viejo—that is to say, on more than half its course—and that this river receives as tributary from Costa Rica the greater part of its waters, which come to it through the vast arteries of the San Carlos and the Sarapiquí.

CHAPTER II.

THE INHABITANTS.

1. *Origin and Customs.*—The population of Costa Rica has its own peculiar character. As in all the Spanish American republics the foundation is in a mingling of the indigenous race and the white conquering race, the latter predominating, however, which is not the case in the other sections of Central America.

At the time of the Spaniards' arrival the Indians were numerous and were divided in various tribes, some of which had attained to a certain degree of civilization. They wove coarse fabrics, built strongholds or *palenques*, manufactured pottery more curious than artistic, and carved idols or altars for sacrifices in stone. They knew also how to work in gold, from which metal they made ornaments and symbols of distinction.* Their social organization lacking unity or cohesion, they could not long resist the Spanish invaders; yet they sold their liberty dearly; one of the audacious *conquistadores* met his death in attempting to penetrate to the interior from the Pacific side.† However, in 1565, under the government of Juan Vasquez de Coronado, the country was to be considered as an acquisition to the Spanish crown, excepting the province of Talamanca, the conquest of which dates from the beginning of the seventeenth century. Immediately after the settling of the first Spaniards the Indian race began to decline. We shall not go into the history of the conquest of Costa Rica; let it suffice to say that it does not differ greatly from that of countries better known. It is, indeed, but the repetition on a smaller scale of what occurred in Cuba, in Mexico,

* The museum in San José contains a magnificent collection of Indian relics, owing to the generosity of the late Don Ramon R. Troyo.

† Diego Gutierrez; year 1544.

and in Peru—on one side, the ever-increasing greed of the conquerors; on the other, a rapid annihilation of the Indians, little fit for work and reduced to a servitude more or less disguised. The few natives who have survived the successive disappearances of various tribes are those who dwelt far from the plateau, and with whom the Europeans never had continuous relations. The present Indians have degenerated and their number diminishes every year. It is with great difficulty that Mgr. B. A. Thiel, bishop of Costa Rica, after several journeys to the interior of the country, has succeeded in reaching some of them and gaining little by little their confidence. The linguistics have derived great benefit from the travels of the courageous and indefatigable bishop, since, thanks to him, we now possess a dictionary of the principal Indian dialects of the country.* The tribes existing at the present day comprise the Gautusos, settled in the basin of the Rio Frio, in the northwest of the country, the Indians of Boruca and of Térraba, occupying the basin of the river to which they have given their name, on the Pacific slope, and the natives of Talamanca, divided into Cabecares, Bribis, and Tiribis. All these Indians put together form a total of something like 3,000 inhabitants, but their number is rapidly decreasing every year.

The greater part of the population are descendants of the Spaniards who settled in the country to succeed the valiant *conquistadores* of the latter half of the sixteenth century. Costa Rica, despite her name, did not in early times offer great resources to those who came to settle; moreover, the tide of population, greedy for riches and mostly adventurers, which directed itself toward America immediately this latter was discovered, had left but little. We may attribute to the

* *Apuntes lexicográficos de las lenguas y los dialectos de los Indios de Talamanca*, by B. A. Thiel, Bishop of Costa Rica. San José de Costa Rica, 1882. See also *Tribus y lenguas indígenas de Costa Rica*, by Dr. W. M. Gabb; published in England and also translated for the *Documentos para la Historia de Costa Rica* of Don L. Fernandez, vol. III.

poverty of the first inhabitants—a poverty which continued up to the beginning of our century—the preservation of the principal virtues of the race—sobriety, simplicity, morality, and love of work—virtues existing to this day in a robust and healthy people.

Despite the spirit of the times, which little by little, the world over, tends to efface the distinctive characteristics of nations, there still predominates in the country a truly patriarchal system. The proprietor of a great coffee or banana plantation is certainly above the *peones* who work on his land. He lives with them, however, on a footing of almost complete equality—at least during the time that he passes in the country. Never were citizens of a republic more democratic. No, or very little, distinction of birth, fortune, or position is made; the individual is judged by his aptitudes and his morality. Respect for order and property is maintained to the last degree. The people—and we refer to the great mass of the population—obey the laws with exemplary submission, and never resist authority. Crime is extremely rare, and property has always been protected, even when political passions have caused the parties to take up arms. We should hasten, however, to add that there are some shadows in the picture; for, if the Costa Ricans have kept intact the ancient virtues of the mother country, they have also retained the faults.

The abnormal augmentation of the wealth of the country, especially of late years, has not failed to have an unfortunate influence upon the morals. There is a tendency to luxury at the capital. The love of gambling—a vice common to all southern people and to many others as well—is perhaps more largely developed than formerly. The abuse of liquor becomes more frequent. We may say that the Costa Rican has one fault of race, owing perhaps to the enervating mildness of the climate. He lacks, as a general thing, the initiative and resolution. To-morrow (*mañana*) is a word too often on his lips, as are the faintly affirmative expressions, Who knows (*Quien sabe*)? Perhaps (*Talvez, quizá*). He has

little faith in the American saying that "time is money," nor that "punctuality is the beginning of politeness." You may have in Costa Rica friends veritably devoted to you; count upon their honor, their loyalty, their steadfastness, but never count upon their being punctual.

Nevertheless, the blood that flows in the veins of the people of this Republic is too generous, the example of their forefathers is still too bright to memory, for the defects, which impartiality has obliged us to point out, ever to alter seriously the happy combination of fundamental virtues which we have outlined. The Costa Ricans are a people of excellent metal, like all nations of agricultural basis. Ardently patriotic, they are very proud of their independence, their autonomy, and of a prosperity due almost wholly to industry. Their motto might well be: Work, order, and liberty.

The *census*, taken at various times from the year 1826 up to the present day, denotes a large increase in population. According to various calculations, the average annual increase is $2\frac{1}{2}$ per cent. The number of inhabitants, however, has more than doubled during the last 40 years. It is very evident that the figures given, even for the last few years, cannot be considered as exact. The census-taking for the entire Republic presents, indeed, great difficulties. Outside of the plateau central the population is scattered, and the people, still ignorant, do not always lend their assistance in that of which they appreciate neither the purpose nor the utility. We will, however, admit as probably correct the figures given by the Bureau of Statistics of the Republic for the last two years. The 31st of December, 1887, the number of inhabitants of Costa Rica was placed at 200,197; on the same date, 1888, at 204,201.*

* For anything referring to previous years consult the *Anuario Estadística*, years 1883, '84, '85, '86; also the book, already referred to in the previous chapter, of J. B. Calvo, translated by L. Tyner. Rand, McNally & Co., publishers, Chicago, Ills. The figures which we have given were obtained from the census sheets. If one calculates numerous omissions which it has been impossible to avoid, a population of nearly 225,000 must be admitted.

The *language* of the country is Spanish; nevertheless, many Costa Ricans know English and French, which are taught in the schools and the knowledge of which is more valuable from day to day in proportion as commerce develops and relations with foreign countries are augmented.

The *religion* of the land is the Roman Catholic. The constitution permits religious worship according to other creeds.* The people are in nowise fanatical, and the greatest tolerance exists from the top to the bottom of the social scale. From the 1st of January, 1888, a general registry of civil state has existed at San José, the capital of the Republic.

2. *Cities and Villages*.—The most important center of population of the country, from any point of view, is without question the capital, San José. This city, which contains to-day from 20,000 to 25,000 inhabitants, is situated 3,711 feet above sea-level.† Its foundation hardly began before the second half of the eighteenth century, and it was not until the year 1813 that San José received from the Spanish court the name of city. Its fortunate location in the midst of the principal centers of population already existing on the plateau central, combined with the fertility of the surrounding lands, gave the new site very speedily an importance of which its founders had certainly not dreamed. The principal focus of liberal ideas, its inhabitants in concert with those of the city of Alajuela, took such a part in the independence of the little Republic that in 1823, San José became the capital at the expense of old Cartago. Political reasons, it is true, brought about the transference of the seat of authority; nevertheless, the new city deserved, in addition to other rights, to be placed at the head of the country as much because of its most rapid development as because of its central location.

Such as it is to-day, the city of San José is one of the most interesting in Central America. Viewed from neighboring

**Constitucion Política*, 1871, art. 51.

† H. Pittier. *Boletín del Observatorio Meteorológico*. Year 1888.

heights, it has a uniform aspect and produces a rather disagreeable impression with its multitude of slightly sloping roofs, a veritable sea of gray tiles, whence emerge rare groups of trees, and here and there the bodies of the principal edifices; but the impression changes when one goes about in the town. The houses are as a rule low, a good precaution against earthquakes; but the streets are regular and well kept. Several buildings are worthy of remark and numerous new ones are in process of construction on every side. Two principal parks and a quantity of little squares brighten the city.

San José having always been much visited by strangers, the hotels there have an international character and offer the traveler all desirable comforts. The most striking edifices are the national buildings, such as the presidential palace and the national palace, where are found the various government offices. The churches, the principal of which, the cathedral, has facing it a park shaded by great *ficus* (a species of fig trees with a diminutive fruit) and maintained with great care. Some of the public or private buildings, besides, attract attention; among these we shall mention the building of the old University of St. Thomas, where are found the museum, the national archives, and the library; the two colleges for young men and young ladies, the latter in construction; the covered market; the Hospital of San Juan de Dios; the insane asylum, hardly completed; the bishop's palace, recently finished, and the Bank of La Union. Some of these buildings—especially the churches—suffered at the time of the last earthquake, but the damages are being industriously repaired. It is particularly in these later years that the ever-increasing prosperity of San José has asserted itself in a remarkable fashion. Almost all the buildings that we have mentioned are of quite recent construction. The city of San José is being so rapidly transformed that it will not be long, judging from appearances, before it ranks first among Central American cities.

The houses to-day are, as a rule, built of brick; very few

line from Limon to Carrillo, on the Atlantic side; and its harbor, encroached upon by the sands, is not frequented as often to-day by foreign vessels as it formerly was. Puntarenas enjoys a healthful climate the greater part of the year, and serves, indeed, as a pleasure resort for well-to-do families of the interior, who go there to pass some months of the dry seasons. Limon, although possessing little salubrity, like all the ports of the Atlantic coast from the mouth of the Amazon to that of the Mississippi, is, however, destined to a grand future. The building of the Reventazon branch of the railway will make of it the port of easiest access for the inhabitants of the interior and the most advantageous point for unloading merchandise coming from Europe or the United States.

From an administrative point of view, Costa Rica is divided into five provinces and two semi-provinces, which in turn are divided into cantons. The following table will enable one to judge of the importance of each of these divisions:

Statistics of Year 1888.

Province of San José (6 cantons)	. . .	63,406 inhabitants.	
" Alajuela (6 cantons)	. . .	51,087	"
" Cartago (3 cantons)	. . .	33,887	"
" Heredia (5 cantons)	. . .	29,409	"
" Guanacaste (5 cantons)	. . .	16,323	"
Semi-province of Puntarenas (3 cantons)		8,409	"
" " Limon	1,707	"
Total	204,201	"

3. *The Government.*—From the memorable 15th of September, 1821, the day when was proclaimed in Guatemala the absolute independence of Central America, Costa Rica has remained a representative republic. The present constitution was proclaimed the 7th of December, 1871. It guarantees notably to citizens equality before the law, the

which we have already mentioned, the trip being made in half an hour. Cartago has a population of 8,000 to 10,000.

The two principal centers of population on the plateau central, a little to the north and west of San José, are the cities of *Heredia* and *Alajuela*, connected with the capital by the railroad. Heredia is situated 3,655 feet above sea-level and Alajuela, 2,950 feet. The climate of the latter city is a little warmer than that of other parts of the plateau. The population of Heredia is estimated at 7,000, and that of Alajuela at 8,000. Both present an agreeable aspect and have public buildings not lacking in a certain beauty surrounding their plazas shaded by great trees on each side. Although capitals of provinces, their importance is less than that of San José or Cartago; they are inhabited by peace-loving people of agricultural pursuits who live in comfort, and are both fairly prosperous.

In the neighborhood of the cities we have just mentioned the country is covered with flourishing villages and half hidden with plantations. There it is that the true population of Costa Rica dwells, since it is there that are found the hardy and simple toilers who wrest from the earth the products which form the wealth of the land. An air of ease combined with antique simplicity characterizes the majority of these villages, superior in many respects to those of certain portions of old Europe.

Outside of the plateau central we must mention the two ports of *Puntarenas* and *Limon* on the two oceans which wash the shores of Costa Rica, the Pacific and Atlantic, and the little city of *Liberia*, capital of the province of Guanacaste. Let us pass over this last, which has not over 4,000 inhabitants and whose development must necessarily be slow because of its remoteness from other centers of population.

Puntarenas and Limon are the principal places of two semi-provinces (*comarcas*). The first of these two ports was for a long time the principal custom port of the country, for both importation and exportation. It has lost something of this importance as a result of the construction of the railway

who elect the Congress. He enjoys a sufficiently extensive power: the appointing of the Secretaries of State, of diplomatic agents, and of all the employés of the Administration is for him, and for some years past he has joined to his duties the command in general of the army. This latter measure has given Costa Rica protection from the military revolutions so frequent in Spanish America. The President has the *veto* right, but limited. If Congress sustain by a two-thirds vote majority a law passed by it and met by veto of the Executive, the latter can no longer refuse his sanction.

According to the budget for 1889-'90 the President, Commander-in-Chief of the Army, receives a monthly salary of nearly \$1,500. There is, beside, assigned him a sum of \$6,000 for outlay of representation, and the nation takes upon itself certain expenses of his household.

The Secretaries of State, to whom the law, democratic to an extreme, perhaps, denies the title of Ministers, are at present four in number. Each one is in charge of several portfolios. The Secretary of Foreign Affairs is at the same time Secretary of Justice and Religious Matters; the Secretary of the Treasury is also that of Commerce and Public Instruction. For a long time Costa Rica had but two Secretaries of State at the side of the President; but the noteworthy development of the country during late years has rendered necessary a division of increased labor. Each Secretary of State presents annually to Congress a report in detail, showing the acts of the Administration in which he has taken part. The ministerial crises which arrive from time to time, as in all truly democratic countries, do not, as a general thing, affect the prosperous march of affairs. In any case they leave the vast majority of the population thoroughly indifferent.

At the head of each province is a *governor* in direct relation with the Executive power. The immediate agents of the governor are placed at the head of each canton. They are called *political chiefs* and their functions somewhat resemble those of the *maires* in France. Beside the *political*

chiefs and for the same territorial division there exists a *municipality* charged with purely local interests.

The organization of the tribunals is very simple, and justice is rendered without great expense. The *alcaldes* are at the hierarchic-judiciary scale; above them come the *judges of the first instance*, two *courts of appeal*, and one of cassation.

These last three combined form the *Supreme Court of Justice*, which has its seat at San José, and the members of which are appointed by Congress. The *jury* is established in the Republic and is composed of but seven members.*

The present tendencies of the Government of Costa Rica do the greatest honor to the men who have been in power for the past few years. After a lapse of dictatorship covering the period from 1870 to 1882, the country seems to take fresh life in breathing the liberty wisely granted it by the latest presidents.

After having contracted during the period to which we have just alluded an enormous interior and exterior debt, and having seen her credit almost completely exhausted, Costa Rica, given up to herself, has forced herself to meet honorably her obligations. Her present financial situation, as we shall see further on, is very satisfactory. The government economizes as far as it is compatible with the labors and improvements necessary to the progress of the country, giving especial attention to reform of old abuses, yet not neglecting any vital interest. The budget of Public Instruction is augmented yearly; all connected with the development of agriculture or industries is sure of substantial support from the government. The forward march, but the march of wisdom without struggle, without the clashing of ideas—the march to the conquest of wealth and prosperity—this it is that characterizes as a whole the work of the Costa Rican Government. The few traditional abuses, momentary errors, vices even which have not yet entirely disap-

* The best resumé of the political institutions of Costa Rica is a little work (*Instrucción Cívica*) by Don Ricardo Jiménez, a young lawyer of great talent and ex-minister. San José, 1888.

peared, have but secondary importance to the impartial observer who, comparing the present with the past, can thus foresee a happy future.

4. *Public Life*.—It is customary in Europe and the United States to consider the old countries of Spanish America as the lands par excellence for political struggles with arms and military revolutions. This opinion, unfortunately too true as regards many Spanish American republics, is, in reference to Costa Rica, absolutely false. Nothing could be more erroneous than the belief that from the day of the proclamation of its independence began the era of *pronunciamientos* for the country. It is true that since 1821 the Presidents have not always legally succeeded one to another. There have certainly been struggles where force has overcome right; some barracks revolutions are counted in the history of Costa Rica; but one may, however, affirm in all justice that the country should rank in this respect far above many other young American republics. In any case the great mass of the population, the country people, have never taken an active part in these passing agitations. Blood has never flowed on Costa Rican soil shed by fratricidal hands, save under such rare and exceptional circumstances that it were not worthy of mention.

The political struggles of Costa Rica are characterized by their calmness. As there exist no clearly defined parties, the candidates are discussed as individuals. In San José and Cartago, it is true, at the approach of the time for the election of the President a number of ephemeral journals appear sufficiently bitter in polemics; but the people do not care very much to talk politics and the elections always take place with order and quiet.

The *Foreign Relations* have for some time merited highest praise. We have already cited, in speaking of the frontiers and the Nicaragua canal, the arbitrations to which Costa Rica has submitted her differences with her neighbors, Colombia and Nicaragua, instead of having recourse to

arms—an example worthy of imitation. Work is also going on toward a realization, through pacific measures, of the union of all the Central American republics. A congress was held last year at San José, and a number of its decisions go to prove that an understanding between the five sister nations is not far off. Thus will have been obtained peacefully that which the too famous General Barrios, the Guatemala dictator, sought to achieve by force.

The *army* is composed of all the citizens of the Republic, who owe military service between the age of 18 and 50 years. So says the law, but practically it is otherwise. Only the young men from the country are called, each in his turn, to pass two or three months in the *cuartel*, where they are given the rudiments of military instruction. This instruction is sufficient preparation for such *guerrilla* warfare as might enter Costa Rica if the country should ever cease to be in peaceful relations with its neighbors. Whatever upheavals may yet take place in Central America, Costa Rica will always be pretty safe from foreign invasions, thanks to her protected situation and the concentration of her population upon a plateau of difficult access and costing little to defend. The army proved its worth in 1856, in taking an active part in the expulsion of the Walker filibusters who had invaded and conquered the neighboring Republic of Nicaragua.

In times of peace the number of soldiers of the standing army can be placed at 1,000. In case of interior revolution the armed force can be increased to 5,000 men, and in time of war Costa Rica can summon to arms from 20,000 to 30,000 soldiers.

The organization of the *police* has been given especial attention by the government. At present it is very satisfactory, particularly in the principal cities. The members of the force are not only remarkable for their activity and promptness at duty, but also for their admirable appearance and politeness. Personal safety is, besides, absolute in any part of the country. One can, without slightest danger, traverse alone and unarmed the most remote and isolated sections of the Republic.

5. *Public Instruction.*—In no department has Costa Rica made greater progress of late years than in that of public instruction. It is but just to say that this progress is due above all to the untiring zeal of the Minister in charge during the past four years, Don Mauro Fernández, whom all agree in recognizing as the real organizer of the country's educational system.

In the budget destined for the year 1889-'90, a budget amounting to a little over four million dollars, \$350,000 are apportioned to public instruction. This department is thus made to rank third in importance.

Primary instruction is gratuitous and obligatory for all children between seven and fourteen years of age. It embraces reading, writing, arithmetic, objective geometry, geography, national history, morals, civic instruction, singing, and gymnastics. Added to this programme is, for boys, military exercises, and for those in the country principles of agriculture; for girls, needle-work and principles of domestic economy.

The number of primary schools is at present near 300, and they are attended by a total of 15,000 to 20,000 pupils. These figures are all the more satisfactory that from the census of 1883 only 12 per cent. of the population of Costa Rica could read and write.

To facilitate the administration of schools, the Republic is divided into especial districts corresponding as well as possible to the political divisions of cantons. The distribution of the houses in some parts of the territory prevents some children from enjoying the benefits of primary instruction. One can foresee, however, that twenty years from now the number of the illiterate will have decreased in vast proportion, and that they will constitute not the rule but the exception.

About four years since the government founded a normal school in San José, for which it provided 50 scholarships. These are distributed among the various provinces and intended for poor and studious young people whose tastes lead

them to adopt the profession of teachers. The normal school from humble beginnings has taken such progress that to-day it is transformed into an academy where nearly 500 children receive primary and secondary instruction. The higher course, which embraces four years of study and from which the pupils are not graduated under 18 years of age, has three departments—classical, commercial, and normal. The academy gives to those passing special examinations certificates equivalent to the degree of bachelor of other countries and corresponding to each of the three departments of which we have just spoken. Professors from Europe, especially engaged, have charge at present of the higher branches, but the government sends a certain number of talented young Costa Ricans to study at the universities or schools of Switzerland, France, and Belgium, who will certainly one day enable their country to be independent of foreign lands in this respect.

Various private institutes existed before the foundation of the academy; these have disappeared and are replaced by a national institute at Alajuela and a private college at Cartago. Heredia also will soon have its higher educational institution. At San José there is a seminary under the immediate direction of the bishop.

During this year will be witnessed at San José the completion of the fine building intended for the *Young Ladies' High School*. The organization of this school is modeled on that of the academy, and includes a normal department which is well attended. There is also at San José a convent school conducted by the Sisters of Sion—foreigners.

In 1844 there was founded at San José a higher educational institution with the name of the University of St. Thomas. Especially designed for legal studies, this university was abolished during last year. It has been replaced by a *School of Law*, on a par with which will next be established other special schools, with a view to preparing young men for higher courses in foreign universities.

The general intellectual culture of the country, we must

add, has already arrived at a satisfactory point. From the press of the *National Printing Office* are issued excellent publications: books intended for the schools; collections of statistics; bulletins of the Physico-Geographic Institute and the Museum; journals of education; pamphlets of utility to agriculturists; legal annals, published by the society of lawyers, not to mention the official journal, the annual reports of different departments, and many other works.

The *press* of the country is represented in ordinary times by five or six journals, nearly all of which are printed at San José and which devote as much space to literature as to politics. In election times, above all the presidential election, as we have already said, their number is considerably augmented; but the existence of nearly all these fledgelings is but brief.

The Costa Ricans are friends to the *fine arts*, and to *music* above all. There was at San José an old municipal theatre which the earthquake of December 30, 1888, greatly damaged; a new one is projected on the same site. Passing theatrical companies used to give *raudevilles* and *operettas* there, and their receipts were always satisfactory. To-day the principal diversion of the people consists in going to the Central Park on Thursdays and Saturdays to hear the concert which is given there by the military band in the afternoon and repeated during the evening before the President's palace. A philharmonic society whose members meet two or three times a week gives concerts of vocal and instrumental music from time to time. In nearly all the houses there are found pianos, which, touched by skillful fingers, enliven the evening reunions or *tertulias* and permit engaged couples to take a turn in the waltz under the watchful eye of the old folks, who discuss gravely the last market price of coffee or the trivial news of the day.

6. *Foreigners*.—Article 12 of the constitution now in force says:

"Foreigners enjoy, within the territory of the Nation, all

"the civil rights of the citizen. They can practice their industries and conduct their business, possess real estate, buy and sell it, navigate along the coasts or in the rivers, practice freely their religion, serve as witnesses, and marry according to law. They are not obliged to become naturalized or to pay forced and unreasonable contributions." *

These privileges have always been faithfully granted, and foreigners have come in large numbers to Costa Rica, especially of late years. According to official statistics their number this year has reached 6,856 persons; our own information, however, leads us to believe this figure a little higher than is correct, and the true proportion is something like 1 foreigner to every 25 inhabitants. The European colony most numerous is the Spanish, which counts from 700 to 800; after it come in importance the German, English, and French colonies, which are equal to that of the United States, and are composed of from 200 to 300 members, according to official statistics. The works of the Reventazon railway branch have been the cause of the temporary increase of some colonies. The Italians, for example, were found to number nearly 1,500 at one time during the past year; the Jamaica negroes who have replaced them are very numerous to-day in the province of Cartago. The Nicaraguans and Colombians compose alone a quarter of the entire foreign population.

That which in the first place attracts foreigners to the country is the excellent climacteric conditions which are found in Costa Rica—conditions which permit the European and the American, as we have already said, to live without danger in almost any part of the country; but the influx continues chiefly because of the decided protection of the government and the admirable welcome which inhabitants of all classes have always extended to the new elements which have come to establish themselves among them. Wiser than many of their too jealous sister countries over

* *Constitucion política de la República de Costa Rica*, 1871. Tit. II, sec. 3, art. 12.

the homogeneousness of their population, the little Republic has understood from its birth that it had only advantages to gain from the influx of the capital, the ideas, and the strong arms which were directed toward it. Instead of repulsing the stranger it welcomed him, considered him as a guest, and made it easier for him to establish his home. Many of the immigrants who came to Costa Rica fifty years ago are to-day the heads of large families, so assimilated to the nation which they have made their second fatherland that it is difficult to distinguish them from families of purely Costa Rican origin.

The foreign ministers accredited in the Republic have ordinarily their residence in Guatemala and represent their various countries in all Central America. There are, however, in San José official representatives of the United States, Germany, France, England, Spain, Italy, and the principal Republics of Central and South America. The Government of Costa Rica has always had amiable dealings with them in all questions pertaining to the interests of their respective citizens.

CHAPTER III.

LAND AND CULTIVATION.

1. *Land*.—The territory of Costa Rica possesses in every section a remarkable *fertility* of soil. A notable evidence of this is found in the central plateau, cultivated uninterruptedly in some places for centuries back, with neither restitution nor manuring of any sort, and, nevertheless, yielding remunerative harvests. Many species of trees take root with the greatest facility; large branches cut and planted live and thrive without any care. The fences are, to begin with, nothing more than a row of stakes; in a few months nature has covered them with leaves and young branches. The telegraph poles, generally consisting of the twisted trunks of trees, called in the country *guachipelin*, and whose wood is extremely hard, are not exempt from this puissance of vegetation. Although dry and charred or tarred over, the part meant to be sunk in the ground, they not infrequently are seen with leafy crowns.

The vast majority of lands are still of only the most recent cultivation; and, indeed, in all probability the most of them were never previously cultivated, neither before nor after the conquest. With fertility is combined quality, as throughout all the zone—privileged in this respect—which encircles the earth between 10° south latitude and 15° north. This zone includes above all the region of the coffee: the territory of Mocha, Ceylon, Java, Manilla, Martinique—all countries celebrated not alone for their fertility, but for the excellence of their products.

Almost everywhere in Costa Rica the land is found to have most favorable conditions for recompensing labor—admirably watered, drained by streams often navigable, and wooded with species of the most valuable and useful trees.

The composition is also varied. The alluvial lands of ferruginous clay and the silico-argilous lands predominate. All over the central plateau the vegetable stratum is of a remarkable depth.

Nearly three-quarters of all the lands are as yet *national property*. Nevertheless, a very considerable part of them has already been taken for the benefit of the railroad, and another part specially reserved for the projected line to the north and for the Nicaragua canal. These conveyances consist of alternate sections, the government reserving one lot to every two. This measure is adopted in order to avoid the dangers of too large holdings by a single owner, often left for a long time unimproved to the hindrance of progress in general.

The sale of national lands is controlled and the price determined by the law. The price is very low and the purchaser has ten years to pay for them, by paying an annual interest of 6 per cent. These privileges are causing the lands to diminish rapidly. The largest extent of lands which the law permits to be sold to one person is 500 hectares.* The acquisition of these lands makes of them definitive property; however, those situated on both banks of navigable streams within a kilometre and a half from each side, and those near water-routes, within 750 feet, are governed by special regulations. They are given gratuitously in lots of 50 hectares on the banks of rivers and of 6 hectares on the banks of water-routes to the first occupant, and they remain his property as long as he lives upon and exploits them. If the land be abandoned for three years it returns to the government. All land improved and enclosed becomes the property of the person who has thus improved it, without his paying for it.

The *value* of lands depends wholly upon their distances from centers and upon the great or less facility of transportation of their products. It is thus to be foreseen that in the very near future, when the projected railroads and water-

* 1 hectare = 2 acres, 1 rood, 8 perches.

routes shall permit easy transportation, the land will increase enormously in value. This rise in worth will make itself felt particularly in regard to the most fertile plains of the north.

The price of a hectare of forest—not cleared—of government land varies from three to five dollars, Costa Rica money. One can buy from private owners sections already cleared from \$50 up. On the plateau central uncultivated land is worth at least \$200, and that planted with coffee brings in some places as high as \$1,500 per hectare (\$700 per acre). When one considers the comparatively short distance from the coast and from the centers of population of the lands not yet cleared, one cannot avoid regarding them as worthy the attention of American and European capitalists and laborers. The mission lands and those of the Chaco which the Argentine Government sells at the same price, are situated hundreds of leagues in the interior of the country, and are probably not as good as those of Costa Rica.

The *laws* governing property offer as complete security as that in Europe or America; and, although the general survey may not yet be finished, each individual estate is measured with care and the plan of the same joined to the title of the property. The Fiscal Code published in 1885 gives the most complete information on this subject and will be consulted advantageously by all who are interested therein. The transmission of property is made the office of notaries public. There is a registry of sales and mortgages, which, as in Europe, gives full and satisfactory guarantee to the owner.

There is no land tax. The owners are simply obliged to contribute to the keeping in order of roads which lead to and from their property. The registry taxes and for transferring are very light. There is nothing to prevent or obstruct the reselling or the so desirable division of estates.

Large holdings are the rule in all parts remote from the centers, which are still almost wildernesses; but where the population is thick the division is most frequent. There are

very few families, even among the poor, who do not own their bit of land, and it is to this—it should be remarked in passing—to this general character of proprietors that is due the ease of the Costa Ricans and the calm and spirit of industry and thrift which distinguish them among all Central American nations.

2. *Principal Cultures.*—The principal cultures are few in number in Costa Rica. They may be reduced to four: the coffee, the sugar-cane, the corn, and the beans, which form the base of exportation and of general consumption.

The *coffee*, which is to-day the principal product of the country and which unquestionably forms its wealth, was not known in Costa Rica a century back.

The first grains, brought from Havana,* were sown at Cartago at the close of the last century, and one may still see in that city the trunks, nearly centenarians, of the trees which furnished seeds for the entire country, and even for all Central America. The *haciendas* or plantations of coffee found in Nicaragua and Guatemala were, in truth, originally the work of Costa Ricans. The propagation of the precious plant was accomplished slowly, despite the efforts of many enlightened persons, who foresaw the great development that this culture might one day attain to and the immense advantages that it would bring to the country. It is only from the close of the year 1840 that the plantations began to be numerous, thanks, particularly, to the measures taken by the government, which placed certain municipal lands for sale with the express condition that they be planted in coffee. In 1861 Costa Rica was exporting 100,000 quintals† of coffee, and thenceforward its production has increased each year. To-day the entire plateau from Car-

* The question of the introduction of the first coffee plants to Costa Rica has given-rise to various controversies, which have but a purely historic interest. It is certain that this introduction dates back no further than a century.

† Quintal = 100 pounds.

tago to Alajuela is covered with plantations of magnificent aspect in all seasons, but especially so in April, when the branches are covered with their white and delicately fragrant flowers, or in December, when the cherry-red berries shine among the dark green leaves.

It is only at the end of the fourth year that the tree has reached a height of about six feet and is in full production. The planting is done in a nursery, and when the trees are a year old they are transplanted to the place they are to occupy permanently. The young trees are usually arranged in long rows, and succeed one to another at a distance of from a yard and a half to two yards. The plantation in quincunx is rare. Between the plants are set banana trees, whose large leaves protect the coffee from the sun while it is yet young. These banana trees, which are cut every year, are, besides, the only improving that is given the soil. For some time past various planters have sought to increase their harvests by covering their lands with guano; however satisfactory the results may have been, the use of this fertilizer, which is expensive in Costa Rica, has not become general.

Besides the bananas, the coffee plantations enclose usually along their principal paths or rising out of the midst of the coffee, larger trees, aguacates, figs, oranges, anonas, giving the plateau central afar off the aspect of a vast orchard of everlasting greenness, for the few species of trees in Costa Rica that shed their leaves annually replace them immediately.

The coffee *culture* demands almost continuous labor during the entire year. The fertility of the soil causes weeds to spring up in such quantities that one has hardly done weeding a place when he must begin over again. This clearing is done with the shovel and *machete*, which makes it very tedious and expensive. On the slopes, and one finds many of these on the plateau, which has many deep cuts, the torrents which sometimes fall during the rainy season carry away a great deal of earth. It is necessary, therefore, to recover the half-laid-bare roots of the trees quite often. Then one is obliged to scrape the trunk and branches of the

trees, which become so covered with lichens and mosses that the trees would die from them. Finally, all the plants are visited after each harvest and all their dry branches carefully pruned. There is, fortunately, no ailment peculiar to the coffee tree known in Costa Rica. A few isolated cases have been known of loss after the leaves turning yellow and falling, but the plant is ordinarily healthy and vigorous in all localities.

The coffee cultivated in Costa Rica is not of any one particular species. Beside the ordinary kind, one finds a species peculiar to the country and characterized by a shorter-appearing stalk, denser branches, and a more compact agglomeration of fruit upon the branches. One gives this species the name *San Ramon coffee*.^{*} Despite its fine appearance, the San Ramon coffee is not generally cultivated. There has also been introduced during late years a species called *Liberia coffee*. The experiments have not given thus far satisfactory results. On the plateau this coffee produces ripe berries all the year round, which is a great inconvenience, since the harvesting cannot be done at a fixed time. Possibly, cultivated in warmer parts of the country, the Liberia coffee would produce more and its fruit all ripen at a fixed time. Experiments are begun, and in a few years will have been ascertained what advantages will accrue from the introduction of this species into Costa Rica.

The *harvest* of the coffee is begun at the beginning of the dry season and lasts from December to March usually. Some years the ripening of some of the berries is more rapid than that of others, and a second gathering is necessary. The women and children are entrusted with this labor. It is sometimes wearisome, for the berries hardly ripe fall to the ground and one must pick them up by going on his hands and knees. The berries which remain on the trees are gathered without any great trouble. These, however, should be necessary, for the buds appear on the branches almost im-

^{*} San Ramon is a place of some importance at the northeast of the plateau.

mediately after the ripening of the berries, and in picking the latter by handfuls one destroys a part of the next year's crop. It is unfortunately impossible to pay the laborers by the day, for the harvesting should be done promptly in order that the preparation—the drying and the placing in sacks, of which we shall speak further on—should be effected before the return of the rainy season. It is especially during the season of the coffee harvest that the lack of labor is felt in Costa Rica.

In order to judge of the amount of work performed by the women and children at their task they are given a basket that will hold 18 to 20 litres (15 to 18 quarts), to fill which they are paid a real ($12\frac{1}{2}$ cents, American money; six pence, English). A good worker can fill her basket from 8 to 10 times in the day.

The *production* of coffee varies naturally according to the lands. It is estimated, however, that a tree in good condition should give a pound and a half of dry coffee. A hectare (2 acres) of very fertile land will produce as much as 50 quintals (5,000 pounds) of coffee in the sack; the average production is 18 to 20 quintals. The production is naturally subject to the chances of harvest. It is seldom that two good years come successively; nevertheless, the figures are very satisfactory for all the late harvests.

In 1887 the production was 261,638 quintals, representing a value of \$5,231,766, and for 1886, 282,844 quintals were gathered, amounting to \$5,656,892.*

The *price* of coffee continues to rise every year. In 1884 it was at \$10 per quintal (of 92 pounds); in 1885, \$12.50; in 1887 we find it quoted at \$18, and last year as high as \$20 and \$22 were paid. This rise proceeds from various causes. First place, there is the high price which Costa Rica coffee has reached on the European market, the English market

* These figures differ a little from those given by the *Anuario Estadística*, which allows 100 pounds to the quintal—100 Spanish pounds, whose weight is only equivalent to 46 kilogrammes. The dollar is the paper dollar, worth about 70 cents, American money.

in particular, a price due as much to the recognized excellence of the product as to the considerable diminution of the harvest in Brazil of late years. Then there must also be considered the vast difference in *exchange* which of late has come about in Costa Rica, where gold is at a premium of 50 per cent. over the money of the country, while formerly it brought but 12 per cent. to 15 per cent.

The dollar which to-day is worth but 65 to 70 cents, American money, was then worth 85 to 88 cents. In making a note of this difference in exchange, it must still be admitted that the price of coffee has risen by a third within five years. The entire country has felt this increase in the value of its principal product of exportation, and its vast progress of late should be attributed in great proportion to this sudden augmentation of wealth.

Next to coffee the principal culture of Costa Rica is that of the *sugar-cane*. It is cultivated from the coasts to the plateau. However, like the coffee, it does not go above the altitude of 4,000 to 4,500 feet. Its products do not figure in the table of exportations. They are all consumed at home. The sugar-cane is employed for various purposes. There are as yet no sugar refineries in the country. Several well-appointed and important factories make turbinated sugar and sugar in powder, the consumption of which does not go outside the towns. The country people prefer the coarse sugar, which is nothing more than the juice of the cane thickened and defecated, which is sold in cakes of different sizes, and whose dirty color is hardly agreeable to the eye. This is called *dulce*. This same *dulce* is used to make the brandy of the country, *aguardiente* or *guaro*, which the government distills at a national factory located at San José, and of which it has made the sale a monopoly. Finally, the sugar-cane is used to feed the cattle, the draught oxen especially, who have no other food on their long journeys from the plateau central to Carrillo or to Esparta, the inland terminus of the railroad coming from Limon or from Puntarenas.

There may be counted in all the Republic about 5,000 hectares (10,000 acres) of land planted in sugar-cane. These 5,000 hectares produced in 1888 11,000 quintals of sugar, worth \$143,952, and 123,324 quintals of *dulce*, estimated at \$1,340,280.

Corn grows very well all over the Republic, and fields (*milpas*) of it in flourishing condition are found to the altitude of 5,500 feet. It is one of the principal foods of the Costa Ricans. To prepare it they grind it between stones—after having boiled it in a solution of lime or lye of wood-ashes—between stones until it is reduced to a paste. Out of this paste they make round, thin cakes, which they cook very quickly by placing them for a few moments on the fire. Thus is obtained the famous *tortilla*, which serves as bread for all the country people, and which many of the city people think they cannot do without. The corn is also fed to horses and mules.

From 445,818 litres* sowed in 1888 were gathered throughout the entire country 29,522,570, giving a return of 55 to 1. In several cantons this was even considerably exceeded.

Finally, we consider the *beans* as a principal culture in Costa Rica, because with the corn they form the main food of the people. They are little black beans, known in the country as *frijoles*. The *frijoles* are served on all tables, those of the richest as well as those of the poorest, at breakfast time. They are cultivated by themselves on dry lands, sometimes in the midst of cornfields and very often upon land that has just been cleared of forests by burning, and which is still encumbered with half-charred trunks of trees.

195,853 litres of beans sowed during the past year produced 3,682,547, something like 19 to 1.

3. *Special Cultures*.—Beside her principal cultures, Costa Rica has also a certain number of special cultures whose importance is not to be disregarded. By special cultures we

* 1 litre = 1.76 pint.

mean those which are not generally distributed throughout the country and the products of which enter but slightly into either the exportation or the general consumption.

The culture of *bananas* on a large scale is only known of late in Costa Rica. In 1880 the first 360 bunches were sent to the United States; in 1884, 425,000 bunches were gathered, and in 1888 the production reached 896,245 bunches, representing a value of \$537,747.

This culture is mostly confined to the semi-province of Limon, in the marshy regions known as the plains of Santa Clara, which are traversed by the Carrillo branch of the railway. Every week steamers leave Limon loaded with bananas, which they carry to either New Orleans or New York. In these markets a fruit which is hardly known in Europe becomes daily of greater importance. Unfortunately the lands on the Atlantic coast, so excellently adapted for the banana culture, are not healthful. The mortality has always been great among the plantation hands. The negroes appear best to resist the climate of Santa Clara, and they are very numerous in this part of the country, while in other parts they are rarely seen.

We have said previously that the banana is found in all the coffee plantations. The various species produced on the plateau central are used for general consumption; they are eaten boiled while green, or fried when ripe. We may also observe that vinegar is made from them, and that it were well worth the experiment at extracting sugar and starch from them. The bananas would also produce brandy of better quality than the *dulce* and to greater advantage, but the laws of the country prohibit this manufacture.

The *cacao* of Costa Rica has not to-day the importance it formerly had, although it is still cultivated on the Atlantic coast and on the plains of San Carlos. It is of excellent quality, especially that of Matina, in the semi-province of Limon, which has a reputation rivaling that of the famous Mexican Soconusco *cacaos*. With a view to encourage the

development of the culture of so valuable a product, the government has lately awarded premiums of \$4,000 and \$5,000 to the proprietors of the best plantations. This encouragement to labor and this protection of agriculture, of which further on will be seen other examples, have not failed to affect and augment the production of *cacao* in the country. The harvest of 1888 was nearly 3,000 quintals, the value of which is estimated at \$165,770. The most of the *cacao* is consumed at home, and more is imported from Ecuador and Colombia, although of relatively inferior quality.

Cereals are not cultivated in Costa Rica as they might be. *Rice*, however, is harvested in all the provinces except those of Heredia and Limon. The kind that is known in Costa Rica grows very well on the dry lands and needs not to be submerged or even irrigated. In 1888, 72,564 litres of rice were sown, which produced 1,975,998, the reaping being thus 27 to 1. This reaping is considerably higher in all the warm regions. The rice of the country is consumed without being refined; it is on this account less white than and not of as good appearance as the imported rice, which, however, is less nutritious.

The culture of *wheat*, once quite important, is to-day almost abandoned. The provinces of Heredia and Alajuela alone cultivate it in small quantities by no means sufficient for the consumption of the country. Flour is imported, chiefly from California, at a low price, which tends to discourage the wheat culture, particularly as coffee brings such a high price. The culture of the latter under the circumstances has become much more remunerative. It would be a good thing for the government to encourage the wheat culture by premiums similar to those which it has awarded to *cacao* proprietors. The vast consumption of corn, which is hardly conducive to perfect health, could thus be replaced by the consumption of wheat.

Among the farinaceous *roots* should be mentioned the *sweet manioca* (*Manipot Aipi*), which is called *yuca* through-

out the country, and which is eaten boiled. Starch is made from it as well. The real *manioc* (*Jatropha maniot*), so common in South America and from which tapioca is made, is not known in the country. The yam and the sweet potato are usually cultivated on the coasts, but they thrive also very well on the plateau. The farinaceous and sweet root of a species of an aroidée, which is called *tiquisque* in the country (*Colocasia Esculenta*), is eaten and a number of other roots, such as those of the *chayote*, more delicate than the *yuca*, the *arracachos*, somewhat resembling potatoes in taste, etc., etc.

The real potato is cultivated principally in the province of Cartago on the hillsides, where it is a little cooler than in the rest of the Irazú country. Its production is fair as to quantity, while the quality is excellent. It is a remunerative culture when one considers the high price paid in the market. During the past year 1,681,477 litres were gathered almost entirely in the province we have just mentioned. The potato culture will necessarily assume greater importance on the conclusion of the Reventazon branch of the railway, for the valuable tubercle cannot fail to become a product for exportation to Colombia and neighboring States. where the tropical climate renders its culture impossible.

The edible *fruits* are not objects of special culture in the country. Everywhere among the plantations are found the principal ones: *oranges*, *limes*, *peaches*, *figs*,* *quinces*, *pomegranates*. All fruits imported from Europe thrive on the plateau. Among indigenous fruits, or of tropical origin, we find *pine-apples*, *aguacates*, *anonas*, *sapotes*, *papaws*, *jocotes*, *mangle*, *grenadilla*, *cocoanut*, the fruits of several palms, those of two cacti, and a host of others of less importance. Among other products serving as food we may mention the *tomato*, *egg-plant*, *pimento*, and the fruits of various cucurbitaceæ (*water-melon*, *ayote*, *chayote*, *zapayote*).

* The peaches and figs, although abundant, are of a very inferior quality; and, curiously enough, they are only consumed green. It is almost impossible to obtain them ripe.

4. *New Cultures.*—The cultures which we have thus far considered are not the only ones from which it is possible to reap excellent results in Costa Rica. Many others could certainly be introduced with success into the country. Various natural products are deserving of a special and careful culture, which in improving them would be achieving great triumphs. Trials have been made up to the present time, but without fully complete results. These trials have, nevertheless, proven that which it was easy to foresee for a country presenting such diversity of zones, that nearly all known cultures are possible in Costa Rica. In order to systematize these attempts and to profit by them practically the government has very recently decided to create a *school of agriculture*, or an experimental ground and garden of acclimatization, which will enable to be obtained not only the improvement of cultures already existing, but also the certain appreciation of the best new cultures. Work upon the new institution is already begun, and a corps of professors, who have studied in the best schools of agriculture of Belgium and Switzerland, will soon be occupied with their labors. The following are the cultures which are the most likely to be introduced ere long into the country. They have all been either already attempted or deserve well to be:

The *vine* is at present the object of the government's especial solicitude, as well as of all persons interested in new cultures. For a long time there have existed in the country several small graperies, which have borne fruit yearly. The acclimatization has lately been attempted of a quantity of California vine stock in the immediate vicinity of San José. It remains to be seen if this attempt will produce good results. It is our opinion that the trials should be made not on the plateau central, but on the well-exposed slopes of the volcanic cordillera or on the sides of the mountains, of calcareous formation, which compose the southern chains. On the argilous plains the products can never be other than of inferior quality. It is probable that in a few years the various questions relating to the culture of the vine, such as

the time for cutting, the mode of culture, and the choice of land, will be successfully decided. It may be observed that during the period of Spanish dominion the culture of the vine was prohibited.

Spices would doubtless succeed in Costa Rica. As we have already noted, the country lies in nearly the same latitude as the Moluccas, Ceylon, the Netherland Indies—countries which have had, so to speak, up to the present time the monopoly of this production. A species of *pepper-plant* is cultivated in the country, the Jamaica pimento, known in Europe as the allspice, and an attempt has been made to introduce the *cinnamon*. The *nutmeg* and the *clove* are easily acclimatized.

Vanilla grows wild in the virgin forests of the hot lands. Any one aware of the high price this product brings in the market cannot help thinking that its culture might well repay any one undertaking it.

Tobacco was formerly cultivated some distance from San José, in the hills separating that city from Cartago. It was of excellent quality. Unfortunately the introduction of the monopoly of its sale has caused the culture to be prohibited. Only foreign tobaccos are smoked in the Republic to-day, imported mostly from the neighboring Republics, from San Salvador especially. There is, nevertheless, good reason to believe that soon or late the government will be able to adjust its pecuniary necessities with the interests of the proprietors, and that the source of wealth which would certainly proceed from the tobacco culture is not closed forever.

The *indigo* is easily cultivated and abundant on the Pacific coast. There is no great profit derived from it at present. The culture of dye-plants has lost its importance with the daily increasing competition of mineral colors. A gardener who would apply himself strictly to the raising of *vegetables* would be certain of finding himself amply rewarded, for up to the present time there exist only a few kitchen gardens in the vicinity of San José, and the products of these are neither varied nor abundant. The few horticulturists who have

established themselves in the country have always done well, for the people are fond of flowers. Better earth could not be found for these to bloom in, and with the aid of certain irrigation methods they could continue to blossom unceasingly the year round.

The *sweet manioc*, as we have already said, is thus far the only plant cultivated from an industrial point of view. Starch of good quality is obtained from it. Not to prolong indefinitely this list of products whose culture to a state of perfection is desirable, we limit ourselves to remark in addition that one could with excellent chances of success undertake plantations of *ricinus*, *sesame*, *arachides*, *olives*, and *cocoa* for the production of oil; of *musa textilis*, *aloes*, *ramie*, *Mexican iztle*, *cotton*, *mulberry*,* and a great number of excellent indigenous fibrous plants for the production of textile fibres. Various experiments have been made in this line, which have already given very satisfactory results. The culture on a large scale and the manufacture of home products are not as yet arrived at, chiefly because of the scarcity of labor. It is probable, however, that by degrees the population will cease to confine itself to the coffee culture, and that in a few years a host of new products will occupy important places in the statistics of exportation.

We may add still further that the introduction of the tea culture into the country would not only be desirable but would produce most remunerative results.

5. *Natural Wealth of Forest and Field.*—The natural vegetable wealth of Costa Rica is so vast and, as yet, has been so little studied that it is difficult for us to give other than a cursory glance at it. It is only in the future, when the species shall have been determined and become better known, and when one will be edified with the actual value of their products, that it will be possible to prepare a catalogue of

* The silk-worm thrives in Costa Rica. It was to be seen in perfect condition in the National Exposition of 1896.

this as yet almost unexploited wealth. For the present we confine ourselves to the following points:

As in all the countries of Central and South America, the woods of Costa Rica are one of the chief sources of natural wealth. Up to the present time, they have not been exploited, except to a very limited extent and only in the provinces lying near the sea-ports. There is a lack of definite knowledge concerning them, and the diversity of names given them, according to the various provinces, still further increases the confusion. However it may be, the various private collections made of the country's woods, as well as the curious marquetry which has been exhibited abroad, have always been admired by connoisseurs. Among the principal species we may cite of woods for cabinet-making: *mahogany*, *bitter cedar* (*cedrela*), and *fragrant cedar*, used in Europe, one for cigar-boxes, the other for pencils; *guaiac* (*lignum-vitæ*), *cocobola*, *granadilla*, *lloron*, *mora*, *quizarra*, *Cortez* (*Tecoma*), *ronron*, *rosewood*, etc. Of timber for building: The *male cedar* (*cedrela*), *chirraca*, *madera negra*, *jaul*, a kind of alder; *nnambar*, different kinds of oak, *guachipelin*, *ira* of two kinds, *guaitil*, *laurel*, *zapotillo*, *guanacaste* (*enterolobium*), *nispero* (*Hymenea*), *corteza amarilla*, or *corteza de venado*, imperishable wood; *quiebrahacha*, hard as iron; *roble* (*Tecoma*), etc., etc.

We may also mention among plants which furnish building material the *canna blanca*, which is used chiefly in the roofs of houses covered with tiles, and of which are made the braces of *bahajaque* of which we have spoken. All the *bamboos* grow finely in Costa Rica; it is to be regretted that they are not exploited, certain of them being unrivalled for light constructions.

The *textile plants*, natives of the country, are numerous and produce valuable fibres. The principal are the *cabulla*, the *pita*, and the *piñuela*. The *cabulla* (*Agave sisalana*) is called *sosquil* or *hennequen* in Yucatan; in Europe, *chanvre de Sisol* or *grass hemp*. In Yucatan the commerce of the fibres of this textile plant amounts annually to a million

dollars. This product, with the simple decorticating machine,* invented by M. Berthet, could become the object of an important industry. It is calculated that a thousand leaves produce nearly 40 kilos (88 pounds) of dry tow. In Costa Rica the *cabulla* is employed only to make ropes or very coarse fabrics. The *pita* (*Bromelia pita*) enters into the manufacture of ordinary hats. The *piñuela* (*Bromelia piñuela*), very common in the country, is hardly used at the present time except for fences.

The *coir* or hairy bark of the cocoa tree, which is in such great demand for the manufacture of cordage, brushes, mats, etc., is not exploited in Costa Rica, abounding as it does. The *bombax*, whose seeds are covered with down, is frequently seen.

The native industry makes use of a species of *rush*, of fibres of small value which are found in the thick leaves of the Yuca, and of a quantity of flexible bind-weeds and fibrous barks. The liber of the *mastate*, for instance, is cut into thongs capable of supporting very heavy burdens.

We have spoken above of the textile plants whose introduction is already the object of experiment or would be desirable for the country. We may add that the fibre of the banana tree could be most advantageously employed in the manufacture of ropes and of paper, although at present it is not used at all for this purpose. We may further mention the New Zealand flax (*phormium tenax*) and the jute (*G. Corchorus*). This last-named is well suited to manufacture sacks, and its production per hectare is five times as great as that of the flax in Europe.† The *hibiscus* abounds in Costa Rica. In the Indies there is obtained from it the fibre which in Europe is called *sun*.‡ In Salvador the natives take the leaves of the *cibotium*, a fern common to all Central America, and make from it an admirable kind of vegetable wool. An

* See *Report on the Machine for Decorticating Agaves of Mr. Berthet*, by E. Saladin. Bulletin of the Rouen Industrial Society, vol. IX, p. 332.

† Introduction to London in 1880: 81 millions of kilogrammes.

‡ Importation to London: 13 millions of Kilogrammes.

industry to be created in the country, where the so-called Panama hats are as yet almost the principal head-covering, is the manufacture of these hats. The plant which supplies the raw material is in Ecuador the *Carludovica palmata*. The leaf of it is split in narrow strips, which are dried in the sun. These strips, under the action of the heat, roll up on both edges and form round straws. It only remains to bleach and to weave them.

The *dye-plants*, as we have already observed, decrease constantly in value, in proportion as the mineral colors may be had at lower prices. Nevertheless, a few will always deserve to be cultivated, and will amply recompense those who devote attention to them.

There is found in Costa Rica the annatto, which is used in coloring all kinds of food, while in Europe it is employed to color butter and cheese; the *curcuma* (root resembling ginger), the *indigo*, various *caesalpinia* (one of which supplies the famous Brazil wood), the *dragonnier*, the *mora*, etc. The *indigo* of Central America is of a superior quality and brings a high price in all markets. The native industry utilizes the coloring properties of a great number of other plants which have no commercial value.

Medicinal plants abound in all parts of the country. Among them we must mention the *castor bean*, the *croton*, the *cassia*, the *sarsaparilla*, the *ipecacuana*, the *ginger*, the *rhubarb*, the *tamarind*, the *papaw*, the *licorice*, not to speak of a host of others which might well attract the attention of apothecary-chemists. To observe them employed in the country with the greatest success, one could not doubt their curative virtues. There are also found various trees, which are called *quinquinas falsas*, whose bark contains cinchona. The real *quinquinas* would probably grow in the country, but the immense plantations of the Indies have so overloaded the market that this culture is no longer remunerative.

Essences and various precious products for perfumery purposes could be obtained from a great number of very common plants. The whorl-flowered, bent grass abounds. There are

CHAPTER IV.

INDUSTRIES.

1. *Agricultural Industry.*—The cattle of Costa Rica are not sufficient for the country's requirements. Herds arrive constantly from Nicaragua and Colombia, intended, as a rule, for consumption. Over 25,000 head are slaughtered annually; the province of San José consumes fully one-third of the total. The live-stock statistics for the past year furnish the following: 262,596 horned animals, 50,738 horses, and 2,125 sheep.

The oxen, as a rule, are remarkable for their size and handsome appearance. Destined for the hardest work, chiefly the carting of coffee and merchandise from the plateau to the coast and *vice versa*, they appear well fitted to the services required of them. They are not of any particular breed, and offer a great variety of hides. Having great strength, they endure exposure and are satisfied with a not always substantial diet, of which sugar-cane cut up in short lengths forms the principal part. A yoke of ordinary oxen are worth \$120 to \$140; the price of these animals has risen, however, of late years, and a good ox team can be sold for \$170. The usual price of animals from three to four years old, which are imported from Nicaragua or Colombia, varies from \$30 to \$40. They are fattened in the country before being sent to the abattoir. The native cows are very much degenerated, principally from lack of care. One cannot tell what breed they belong to, all the original breeds being mixed by most irregular crossing. They remain the year round in pasturage, and they do not give a quarter of the milk that might be obtained from them if they were properly cared for and fed. The calves are never separated from their mothers, and the cows are seldom milked more than once a

day. What is more, the bulls and the cows are left the year round in the same pasture. From this it results that young heifers are found with calf before they have the necessary strength for normal gestation, and that their young are naturally weak. It may be added that the prairies, as a rule, have no great variety of fodder, and are especially lacking in leguminous plants, and that no supplementary fodder is supplied for the cows, not even at the time of milking. The poor results thus far need hardly other explanation.

To be strictly just, we must add that the errors and deficiencies which we have just alluded to are recognized by the greater part of the large owners, and that the latter are occupied to-day in the serious consideration of remedying the evils. The government, for its part, has wished to encourage the numerous attempts at improving the breeds of cattle which have been made during the past few years. Besides having itself introduced various foreign breeds, it has protected the importation of blooded animals by paying the sea freight upon them for the farmers who have bought them in the United States or Europe.

Thanks to these measures, a considerable number of head of foreign blooded cattle may be counted to-day in Costa Rica. With good care and intelligent crossing, these animals will certainly improve the native breed.

As regards ignorance of the true principles of stock-breeding, the school of agriculture which we have already mentioned will probably succeed in correcting this, by turning out good pupils and organizing meetings to which the agriculturists will be invited. The Costa Rica farmer is less set in his ways than others of his class in other countries.* He

* We may adduce, in proof of our assertion, one circumstance in particular. In the very poorest habitations throughout the country the foreigner finds, to his astonishment, the sewing-machine. A people so quick to comprehend the utility of this machine would certainly be prompt to seize upon the advantages of other machines which would simplify their labor in cultivating their lands and take the place of hands, the scarcity of which is a serious drawback.

will certainly see very quickly that there are only advantages to be derived in altering his present methods. He will choose new ways all the more quickly, as the breeding of and trading in live stock are considered very paying in the country.

The price of an ordinary cow is from \$30 to \$80. Young animals of foreign breeds recently brought into the country bring exceedingly high prices. For a bull of from a year to eighteen months \$300 to \$400 are paid.*

Butcher's meat is high. Its quality might be better, and its unsavory taste comes from the animal's watery and hardly varied diet. The fillet costs 25 cents per pound, ordinary meat about 20 cents; and the common people, those who eat meat every day, have to pay 10 to 15 cents for pieces which are not choice. It is almost impossible to obtain other meat than beef or pork; the calves are never killed, and mutton is rarely to be had.

The *dairy products* in Costa Rica give evidence of the insufficiency of implements and lack of knowledge how to manufacture them. The dairy industry is as yet in its infancy, but it would certainly bring wealth to any one undertaking it with proper knowledge. It is not always easy to obtain *milk* at San José, and that which is brought from the country farms in tin cans might be better in many respects. Without returning to the question of fodder, which we have touched upon above, we may remark that the present mode of transportation is very poor. The cans are hung on either side of the saddle on the back of a mule or an old horse, which is ridden by a boy, and the milk is delivered to the consumer after having been shaken up violently for several hours. The farms lack cellars besides, which are absolutely

* The principal blood introduced thus far to improve the native breeds is the Durham, Jersey, and Dutch. There are also a number of head of Swiss cattle of the Schuytz breed, which have all not come direct, but many of which have been brought from the United States.

necessary, in view of the general temperature, in order to keep the milk fresh twenty-four hours.

Excellent *butter* is made, nevertheless, in some of the provinces; in Cartago principally, where the climate is cooler than in other parts of the country. Only the price of this butter is beyond the reach of moderate purses; it sells at a dollar a pound. For this reason there is a great deal of imported butter consumed in Costa Rica. This comes in cans and is usually adulterated with margarine. Despite its often disagreeable taste, the latter, thanks to the difference in price—nearly 50 per cent.—offers decided competition to the native butter.*

The only *cheese* that is made in Costa Rica is a cheese or curds without pressure and of insipid taste. Various recent experiments have proven, nevertheless, that the manufacture of a good cheese not only is possible but would be very profitable, especially so for the farms situated at some distance from the towns, where the milk is often lost for lack of being able to sell it or of knowing how to utilize it.

Hides are an article in commerce whose figures reach to a hundred thousand dollars. As yet the horns and hoofs are not utilized, nor are the bones, which properly rendered could be turned to account for fertilizing purposes.

The breeding of *horses* is progressing, but still rather slowly. The horses of the country are of no especial character or breed, excepting, possibly, certain lean-looking little beasts which are really very strong and incomparable for the mountain roads. The heavy mud during the *invierno*, or rainy season, does not permit of horses being used as draught animals; they are then employed exclusively with the saddle or as beasts of burden. The *mules* compete with them, but the native horse is almost as sure-footed. He has,

*The high price of the milk, 12 to 15 cents per quart, is naturally the principal reason for the dearness of the butter. We believe we may affirm that a farmer from the North, well versed in dairy matters and provided with a small capital for the first expense of establishing himself, would do a remarkable business in Costa Rica.

moreover, the advantage of an easy gait, similar to that of the horses called *bidets* in France, while the trot of the mule is exceedingly fatiguing.

The price of horses varies greatly according to their quality. An ordinarily good horse is worth \$40 to \$70.* Good mules cost more; pretty fair ones may be found at from \$60 to \$80.

Improving the horses of the country will very soon be well under way. Already companies have been formed for the introduction and propagation of excellent Chili breeds.

Sheep are very scarce in the country and of a kind hardly worthy to be mentioned. In all the Republic there may be counted 2,000 head. Their introduction and breeding in considerable numbers is highly desirable. A sheep is worth \$10.

The *hogs* are black in color and very little domesticated. They are numerous, but yield no such returns as might be obtained from them if they were properly fattened. It is the custom to let them wander around the houses and along the roadside in the country. A young pig is worth \$4 to \$5. Well fattened, his price would be from \$25 to \$50. Hog-raising is profitable. All Costa Ricans employ lard for the cuisine, and great quantities are imported from the United States.

The *poultry* business is undoubtedly a paying one. Hens are worth forty cents apiece, and the smallest chicken more than half as much. They are very ordinary layers. A number of fowls of good breed have been introduced, it is true, but as yet there is very little accomplished in this direction. *Eggs* bring prices according to the seasons. The average price is thirty-six cents per dozen. The results from this product are very satisfactory.†

* Horses may be found from \$10 up; there are others at from \$300 to \$400. The prices we have given thus far relate to animals able to perform the work which one has a right to exact from those occupied daily in the country.

† Various species of fighting cocks are raised, but it is probable that this sport will soon have ceased. Only a certain class are interested in it, and the last Congress decreed that it be absolutely prohibited.

Ducks, geese, turkeys, and all other door-yard fowls are rare in the country. The few amateurs, however, who raise them find it profitable, and the development of the industry is foreseen for the future.

2. *Coffee Benefiting*.—The coffee and sugar in the raw state being the most important products of the country their preparation constitutes the principal industry of it.

The *coffee benefiting establishments* comprise usually a series of buildings designed for the various processes through which the grain has to pass in order to become marketable. The preparation of the coffee, as it is practiced in Costa Rica, consists of the following operations:

a. *The Grinding and Fermentation*.—The berries harvested are ground lightly and washed in running water in cement tanks, where they undergo the beginning of fermentation. This first operation is for the purpose of freeing the berry from a portion of its fleshy pericarp, and to dissolve the gummy portion of the same pericarp, which otherwise would adhere tenaciously to the bean and render its immediate dessication difficult. The pulp is gathered carefully and after fermentation used for fertilizing purposes. The grinding is not always done; the leaving in the fermentation tanks is absolutely necessary, at least in order to produce what is called washed coffee. In Costa Rica that which is called the dry process is not employed. It gives more aromatic products but of inferior appearance.

b. *The Drying*.—Removed from the tanks and freed from the pulp, the coffee is spread out in the sun in great patios sometimes made of clay but usually of cement. It is left exposed to the sun until it is perfectly dry; that is, until the interior grain is hard enough to resist the mark of the finger-nail. This drying operation is the most important of all. Some years the crop is a partial loss because of bad weather; a rainy *verano* is one of the direst calamities for the country. Of late drying-machines have been introduced, intended to replace the sunlight in unfavorable sea-

sons; but the expense of drying in this manner would be so great that they will probably never be much used. One does not yet find the centrifugal turbine, which is employed elsewhere at present with such success in shortening the time of drying. The turbinage of the coffee takes from it two-thirds of its superabundant humidity.

c. The Cracking.—When it returns from the patios the coffee has its grains hidden in the dry pericarp if it have not been ground at the beginning; if it have been ground the grains are still covered with a horny substance which is nothing else than the endocarpe. These coverings must be broken. This process is performed by means of great wheels traveling in a kind of circular track half filled with dry coffee or *cascarilla*, as it is called in the country. This machine was formerly worked by oxen; to-day hydraulic force replaces them nearly everywhere.

d. The Polishing.—Before it is ready for consumption the berry has still to undergo a final operation. It must be freed from the fine pellicle (episperme) covering each grain. This is done by means of a very simple machine composed of two cylinders of rugose surface moving in contrary direction. The coffee passes out of this as it appears in the market.

e. The Sorting.—Before it is placed in sacks it is sorted, in order to remove the broken or damaged beans and to arrange it in size. There is, indeed, a notable difference of bean in the various qualities. These are known chiefly according to the size and regularity of the grains. The coffee whose berry produces but a single grain, round and resembling a large green pea, with a lengthwise furrow, is that which is valued most—not because it is better, but because it resembles the grain of the Mocha coffee, and thus obtains the preference of the consumers. Following this come the coffees of the first, second, and third classes. The sorting is done either by machine or by hand; in the latter case women and children are employed.

The coffee benefiting establishments in the country number at present 256. This industry is naturally centered on

the plateau—in the provinces of San José, Cartago, Alajuela, and Heredia. For several years machinery has almost everywhere replaced the labor of men and oxen. Small owners send their coffee in the berry to the proprietors of benefiting works, who, for a certain remuneration, return them their coffee in sacks. The machinery used is worked by water-power, either with large water-wheels or turbines. Every year the stock of implements is improved and it is sought to replace the laborer by the machine, the former being seen less often in proportion as the country is developed and offers a vaster field for divers occupations. It is especially at the time of harvesting and of benefiting the coffee that hands are lacking, and that throughout the country is felt the necessity of immigration of robust laborers in large numbers. At present an abundant yield in the country is almost to be dreaded, since often one hardly knows how to gather harvests that are at all large.

The *sugar mills* are of very simple construction and their product, *dulce*, although valued by the people, is exceedingly primitive. These mills generally consist of a system of rollers between which the cane is crushed more or less perfectly. The boiling and defecation of the syrup are effected afterwards in the vats, whence the boiling liquid passes into wooden moulds and congeals in the shapes of truncated cones. This is the *dulce* or thickened juice of the cane. Some mills are moved by water-power, but oftener the force is supplied by oxen, or even by the workmen themselves. A person traveling at night in the country often hears near habitations a lugubrious sound, similar to a long and strident groan, which is repeated at regular intervals. He is near some sugar mill. If curiosity induce him to approach he sees in the red glare of the furnaces, which causes them to seem fantastic creatures, men toiling laboriously to move the heavy motive beams of the mill.

There are over a thousand *dulce* mills in Costa Rica; 619 of these are built of wood and 449 of iron. We have already mentioned the two well-appointed turbine sugar factories of the country.

The *saw-mills*, numbering 74, are very complete in arrangement. This industry is, naturally, carried on for the most part at some distance from the plateau, since the latter is wholly given up to cultivation. It is, nevertheless, very profitable, since the price of joists, of sawed planks, or of laths increases yearly, according as more houses and a better kind of houses are built in the cities.*

3. *Various Industries*.—No grand industry exists as yet in Costa Rica. The few factories which are found employ but a limited number of workmen, and the products which they turn out are not sufficient for the country's needs. Agriculture, in truth, occupies all the hands and offers such large and certain profits that large capital is not devoted to anything except cultivation of lands. There exist, nevertheless, on a small scale, a certain number of industries which will doubtless be developed when the population is greater. We shall allude to them briefly.

The *flour* industry is represented by a single steam-mill, situated in San José and belonging to a foreign company. With the increase of the wheat culture this industry cannot fail to attain greater development. There are also found in the country two or three *starch factories*, which extract it from the sweet manioc root.

Brick-making is well represented. Over a hundred brick-kilns may be counted in the country. The argilous earth is in great abundance, while stone is rare, on the plateau central. The construction of the kilns leaves much to be desired. In Costa Rica they only know the kind called portable ovens, the fuel for which is extremely dear. This industry gives considerable profit. Nearly all the building in the cities is of brick, although this is hardly adapted to a country subject to earthquakes; it would better be replaced by iron and wood.

* The price of boards naturally depends very much on the cartage, which is always high. The intrinsic value of certain woods which become scarce is not to be disregarded. Firewood costs at least \$4 per cubic yard in the cities of the plateau central.

The *tanning* business counts a certain number of establishments, whence an ordinary leather is turned out. This is used in the country for the manufacture of saddles, often gotten up very artistically; for *alforjas* or saddle-bags; for straps, cruppers, and all that goes to compose harness.

Several *soap factories* supply the trade with a resinous soap good only for laundry purposes.

The *candle factories* in like manner furnish candles of inferior quality.

There are two foundries at San José. They are certainly of great service, but only for repairing. The metal, in truth, and the coal used by them coming from abroad, articles already manufactured can be brought and sold much cheaper than those manufactured on the spot.

A *weaving mill* was established several years since at Heredia and is fairly successful. The raw material for the fabrics which are manufactured there come from abroad; nevertheless, the ordinary native cotton cloth can compete with that imported. The Heredia factory gives especial attention to the manufacture of *rebozos* (long pieces of silk), which the women of the poorer classes use to cover their shoulders in the street or wear over their heads when they go to church. This sort of a shawl is always of some bright color and is expensive. It is not unusual to meet barefooted country women whose shoulders are wrapped in a rebozo worth from fifteen to twenty dollars.

Other industries have taken a start in the country. The manufacture has been undertaken of castor oil and other oils, chocolate, perfumery, ice, gaseous waters, beer, etc., with machinery brought from Europe or America. To encourage these industries the government generally exempts the machinery imported of duty. Many others will doubtless have a beginning, once the railroad to the Atlantic is completed and the transportation of heavy pieces of metal is rendered easier.

Beside the foundry which we have mentioned above and a liquor factory, of which we shall say a few words in con-

nection with monopolies, the government has also a *Remington cartridge factory*, which supplies ammunition for the army. Imported cartridges are soon affected by the moisture.

The railroad company has various *workshops* for building and repairing its stock. A good deal of the fine work of these was much admired at the exposition of 1886.

As we have already said, the *mining industry*, until now amounting to very little, has a bright outlook. The appliances introduced of late will permit the prompt and serious exploitation of the ores, which are so rich and plentiful in certain parts of the country.

The *pearl fishery* is productive on the Pacific coast. The company which now has the monopoly makes a specialty of mother-of-pearl, and employs a number of competent divers.

A concession has recently been granted by Congress to a Costa Rican for the establishment of *salt-works*, where salt will be obtained by a process similar to that employed in Europe.

All the industries of which we have just spoken, although conducted on a small scale and rather primitively, are, nevertheless, paying. Foreign manufacturers would certainly find in Costa Rica a most encouraging locality for introduction of new manufactures or the improvement of those already existing. Streams everywhere furnish the motive-power required. The rapid increase of population augments daily the consumption of products. The neighboring Republics, lacking industries, as a rule, provide a large field for exportation. Artisans and men with trades are certain of making a good living in the country. A good carpenter easily earns \$3 per day. A cabinet-maker or an upholsterer would easily make twice as much; for, although a great deal of furniture is imported, that which is made in the country with imperishable woods has always the preference. Pastry-cooks, pork-butchers, tailors, shoemakers, and bakers who arrived ten years since in the country without capital are all well off to-day. Good salaries and constant

work can be assured to good watch-makers, printers and book-binders, stone-cutters, masons, and house-painters; blacksmiths, machinists, coppersmiths, saddlers, umbrella-makers—in short, to all those possessing good practical knowledge and a determination to persevere in any industry, great or small.

4. *Monopolies.*—There is occasion here to distinguish between the monopolies granted to private individuals and those whose exploitation is reserved by the government.

Literary and artistic copyrights are protected, as well as are inventions, for a limited time, by article 73, paragraph 20, of the present constitution. The monopolies which have been enjoyed or are at present enjoyed by certain companies or certain individuals were granted them formerly by Congress for a limited time. They were necessary and just in the time of the first great enterprises or the launching of industries; to-day they would be unnecessary and disadvantageous for the country. Indeed, as we have just seen, industry is no longer to be created; it has need only of development, and this development will certainly be better and rapider with free competition. This is why it is so difficult now for a private individual to obtain the exclusive right for any exploitation whatever. In the same way the contracts made recently by the government with different companies limit the exclusive rights to a few years and stipulate that, this time having expired, they shall be granted to all others who, under the same conditions, shall ask for them.

The government has reserved for itself two monopolies: the sale of tobacco and the manufacture of liquors. We have already alluded to the first in speaking of cultures. We shall add here that the cigar industry, reduced at present to the manufacture of common cigarettes and ugly little cigars, would certainly be afforded great scope with the cessation of the monopoly. The *chircagre* tobacco which was formerly harvested between San José and Cartago was of an

undeniably superior quality and was greatly appreciated by foreign connoisseurs. Should its culture again become free, it will be an object for large exportation, not only in leaves but also in the shape of home-manufactured products. We shall have to return, further on, to the question of figures. We may say, however, that this monopoly gives to the nation an annual income of half a million dollars.

The manufacture of *liquors* is centered at San José in a vast establishment. The distillery apparatus is excellent and the products of the national factory are usually of a fine quality. The contraband brandy has a reputation for superiority, which it owes, possibly, to the attractiveness of forbidden fruit. It is dangerous to the health, however, not being rectified. Despite active surveillance and the severe penalties which are imposed upon those caught in the act, it has not been possible to prevent entirely the illicit distilling. The principal liquors manufactured are an anisette brandy, a white rum, and the pure brandy from the cane, commonly called *guaro*. The national factory produces some other liquors which are not largely consumed. The introduction of foreign brandies and liquors is permitted, and these are imported yearly in great quantities; but such high duty is paid that the consumer finds them very dear.

The liquor monopoly gives the government a yearly income of nearly a million dollars.

CHAPTER V.

COMMERCE AND FINANCE.

1. *Exportation and Importation.*—The march of commerce in Costa Rica is naturally in keeping with the development of agriculture. A year of good harvests or of high price of coffee is a year of great importation. This explains the fluctuations which appear in the following table.

Year.	Exportation.	Importation.
1883	\$2,431,635	\$2,166,074
1884	4,219,617	3,521,921
1885	3,296,508	3,660,931
1886	3,225,807	3,538,435
1887	6,236,563	5,601,225
1888	5,713,792	5,201,922*

In 1850 the exportation and importation, which were more or less equal, were each figured at a million dollars. The year 1888 showing a general movement of over ten millions of dollars, commerce is quintupled in a period of, say, forty years, while the population in the same length of time has only doubled. Within five years it has doubled, while the population in that time has only increased one-tenth. We have already indicated the principal reason for this increase of importation and exportation. In 1888 the coffee constituted nearly five-sixths of the total of general exportation, and the same proportion is observed for the preceding years. It is with coffee that Costa Rica should pay for what she purchases abroad. It is thus almost entirely the increase of its production and its present high price which have per-

* All figures given in this chapter are taken from Calvo's Costa Rica (L. Tyner, editor; Rand, McNally & Co., publishers, Chicago, U. S. A.), from the Annual of Statistics, years 1886-'87-'88, edited by Don Enrique Villavicencio, and from the Report of the Minister of Finance, year 1888.

mitted the extraordinary development of the commerce of importation of late. Other facts of less importance explain the great introduction of foreign merchandise within the past three years. It is within this space that they have begun to introduce into the country a great quantity of machinery for coffee benefiting and for various young industries. With the abundance of resources has come an increase of needs.

For some time past the Costa Rican has traveled for pleasure. He returns from Europe or the United States with tastes which he had not before setting out. Little by little the love of comforts, and of luxury even, have been introduced, and one in rivalry with another in this direction, the principal business houses have been compelled to satisfy new demands. Articles for which there was absolutely no call a few years since have come into daily demand. We may remark here that the situation could not but prove distressing should a fall in the price of coffee or bad harvests come to diminish the sole resources which at present pay for this comfort and these more and more refined tastes of civilized life.

It is useless to enumerate here the *articles of exportation*, since the coffee constitutes nearly the entire amount. We may say that after it the bananas and hides alone are of importance. Nearly half of the coffee exported is sent to England. Next in importance come the United States, and afterwards, in somewhat the same way, though at a considerable distance, Germany and France, as indicated by the following table:

Coffee Exported in 1888.

Countries.	Quintals.	Value.
England	122,492	\$2,859,896
United States	62,229	1,395,920
Germany	11,832	279,763
France	7,803	165,002
Other countries	1,903	41,672
Total	206,259	4,742,253

The principal *articles of importation* are: fabrics of all kinds; linens, cloth, stuff, and silks, whose value is over \$1,200,000; underwear, wearing apparel, shoes and stockings, pita hats, sacks for coffee, altogether representing a value of \$350,000; necessities of life (rice, flour, sugar, beans), estimated at \$250,000; preserves, canned goods, \$120,000; oils, greases, lard, \$140,000; alcohol and foreign liquors, \$213,136; beer and wines, \$240,527; drugs and medicinal products, \$116,391; tobacco, \$84,282; perfumery, \$40,000; articles of luxury, \$38,600; barb wire for fences, \$91,270; machinery of all sorts, \$80,116.* In the table of importation for the year 1888 there are also \$365,282 worth of material for the railroad in construction, and a little over \$40,000 worth of coal.

The principal *lines of steamers* which touch at the ports of Costa Rica are, on the Atlantic side, the Royal Mail Steam Packet Company's, whose steamers leave from Southampton and returning touch at Cherbourg; the Atlas line, whose steamers leave from New York and touch at Limon weekly after having passed Cuba, Venezuela, and Colombia; a line direct between Limon and New Orleans, engaged chiefly in carrying bananas, and a Hamburg line, which sends a vessel every month to Costa Rica. The port of Puntarenas, on the Pacific side, is served by the Pacific Mail line, which has the coasting trade between San Francisco and Panamá, and *vice versa*. A few steamers of German companies and occasional sailing vessels which double Cape Horn stop in this port, especially during the time of the coffee harvest.

In 1888, 140 arrivals of steamers were counted in Port Limon and 162 in Puntarenas. The foreign steamers do not pay any *tonnage*, and are only subject to a *light-house* duty of \$25 on entering and leaving the port. The sailing vessels pay 25 cents per ton of registry and \$10 light-house duty on their arrival and departure. The sailing vessels loaded with ballast or coal are exempt from *tonnage*. Ships

* Of this sum the sewing-machines make up the amount of \$42,272, or more than half.

of war, merchant-vessels obliged to touch regularly at one of the Costa Rican ports, and boats obliged by unusual circumstances to anchor in the waters of the Republic, pay no duty.

2. *Financial State of the Budget.*—The budget of the Republic has followed the progress of commerce, as the following table indicates:

State of the Treasury.

Year.	Receipts.	Outlay.
1824	\$14,751 00	\$14,243 00
1840	117,164 00	67,992 00
1879-'80	2,525,726 12	3,158,823 72
1886-'87	2,883,752 03	2,772,315 07
1887-'88	3,582,815 87	3,305,547 57
1888-'89	4,151,584 64	3,939,997 75

The budget already voted for the economic year 1889-'90 amounts, for outlay, to \$4,183,798.23, balanced by a sum of probable receipts of \$4,287,686.89, leaving a surplus of over \$100,000.

Of the outlay one-half consists of amounts allowed to the different secretaryships; a quarter is devoted to the payment of the interest and amortisation of the debt; the fourth quarter is placed on the budget under the head of: Various expenses and exploitations of monopolies.

The receipts account is established by means of the products of custom-house, of exploitation of monopolies, and ordinary revenue from smaller importation.

The examination of the figures we have just given leaves no doubt as to the prosperous condition of the country and as to the equilibrium of the budget during late years. The two last administrations, that of Don Próspero Fernández, and particularly that of General Don Bernardo Soto, have made it a study to improve the finances and restore the credit

of the country, which had been for ten years in regrettable shape.

The statement of facts which we have yet to present in the chapter will prove beyond doubt that the end has been absolutely attained, and that to-day Costa Rica may rightly rejoice over her financial condition.

The principal source of income of the nation to-day is the custom-house. All goods destined for Costa Rica should be accompanied by consular invoice. They begin by paying a *wharfage** at the moment of unloading, then are sent to the central custom-house at San José. In Puntarenas and Limon there are branch custom-houses where one can obtain his goods on complying with certain formalities; in Carrillo there is a great warehouse.

A *company of agencies*, to which are consigned the most of the vessels which arrive at Costa Rica, usually has charge of the transportation of merchandise to the central custom-house.

The *duty* is very high on certain articles, such as brandy, tobacco, objects of luxury, silks, furniture, perfumery, and fire-arms. The government has wisely reduced the duty, of late, on necessary articles—wines notably. It is probable also that in the next revision of the tariff the duty will be abolished or considerably reduced on raw materials, with the view to encourage young industries. Nevertheless, as duty is calculated on the gross weight of the goods it increases in a considerable proportion the price of the latter. Added to the expense of transportation from the ports to San José, it may be estimated that it will double, on an average, the cost of the imported articles. It is nothing astonishing, when one refers to the figures given above as to importations, that the custom-house gives to the State annually over two-fifths of its actual revenue. The income from customs is applied first of all to the payment of interest and amortisation of the foreign debt of the Republic; the surplus goes into the National Treasury.

* The *wharfage* applies to exported goods as well.

The custom-house in 1888 produced \$1,707,584.92; in 1887, \$1,302,741.24, and in 1886, \$807,801.44. This revenue has therefore doubled in three years. We have given, in speaking of commerce, some of the reasons which explain this considerable augmentation. Will importation always be as great? May a like income from customs be counted upon in years to come? These questions are difficult to resolve. We do not accept, however, the opinions of the pessimists who, foreseeing soon or late a serious fall in coffee, argue a diminution of importation in consequence. Speedily, we feel certain, new cultures will have increased vastly the fortune of the country; vast immigration will have poured into a region where natural wealth of every description only awaits exploitation. New supply and new demand will certainly compensate for the fall, if fall there come. In any case, like a wise people, the Costa Ricans have not fallen asleep over their present prosperity. Government and private individuals are laboring to increase it still further, and as long as the policy inaugurated by the last two administrations—as we have previously remarked, that of President Soto in particular—shall be followed, Costa Rica will merit its name—that is to say, it will be rich and prosperous.

The *tobacco* and *liquor* monopolies together constitute an income equal at least to that of the custom-house. This income also has notably increased of late years, although in less proportion than that of the former. In 1886 it produced \$1,310,887.37; in 1887, \$1,559,071.22, and in 1888, \$1,696,356.27. The net gain for last year is \$1,334,666.41 for the monopolies of liquor and tobacco combined.

Among the *revenues of lesser importance* we may cite the stamped paper, a tax on the slaughter of animals for butcher purposes,* the patents for the sale of liquors, of beer and foreign wines, the registration of property and mortgages,

* This tax is called "subvention of war," because it was established to amortise the debt contracted on the occasion of the 1856 war against the filibuster, Walker. Although the debt is now paid, the tax has been continued. It produces about \$80,000 per annum.

and the products of post office and telegraph. All these revenues together gave for the year 1888 a total of nearly \$300,000.

The *municipal* taxes are not high. The owners of real estate alone are obliged to pay the taxes destined for the maintenance of the municipal police, the street-lighting, and the supply of water in the houses. Merchants and bankers are subject to certain taxes in accordance with their kind of business, and a small number of industries pay likewise a municipal tax. All residents of the Republic over twenty years of age are obliged to contribute a dollar annually, to their respective municipalities for the improvement and keeping in order of roads.

3. *Interior and Exterior Debt.*—The public debt is divided into the interior—that is, contracted in the country—and the exterior, or that contracted abroad.

The *interior debt* is partly consolidated and partly floating. The consolidated debt is represented by the capital of various institutions of education, of charity, and of benevolence. The government pays the interest of these capitals to the institutions mentioned, but has thought it necessary, for various reasons, to protect their having had the covering of the national responsibility. This consolidated debt represents at present a total of \$433,488.27. The floating debt amounts to the sum of \$1,521,875.76. It comprises chiefly \$870,244.25 of paper money of two different issues, of which the government every year cancels a certain quantity. The total of the interior debt is \$1,955,364.03, which the public treasury is to reimburse at a day's notice, when the interest of the country shall require it, in disposing of the stock which shall be returned in the paid capital of the Railroad Company of Costa Rica.*

The *exterior debt* had its origin in the loans effected in

* For complete information on this point and on headings 2 and 3 in general, see the "Report of Finances and Commerce," year 1889.

1871 and 1872 for the construction of the projected railroad from Limon to Puntarenas, crossing the plateau central.

This debt, very great at the beginning, was consolidated in 1885 and reduced to a sum of £2,000,000, with interest at 5 per cent., thanks to an arrangement between the governments and the bondholders effected by Mr. Minor C. Keith, whose energy and perseverance we have already had occasion to praise.

The government on one hand recognized definitely a debt which until then had not received complete legal sanction, hypothecated the revenue of its custom-house in order to assure itself of the use, and on the other obtained the complete achievement of the Limon-Cartago railway, of vital importance to the country. A company was formed to insure the conclusion of this great work. It was granted, among other privileges, the monopoly of the exploitation of the entire line, including the portions constructed on the plateau central and 800,000 acres of government lands.* The State, for its part, received a third of the capital judged necessary for the construction of the Reventazon line in unencumbered shares, and reserved for itself the half of the product of exploitation or sum resulting from sale of lands conceded.

The *payment of interest* on the thus recognized exterior debt began, by virtue of the arrangements completed by Costa Rica, the first of July of last year, and since then have been continued with scrupulous exactitude. Fifty thousand pounds sterling were thus paid on July 1, 1888; on January 1, 1889, and on July 1, 1889. The government has thereby proven not only the admirable condition of its finances, but also that it is firmly decided to respect and to fulfill the obligations it has contracted. The credit of the country, formerly much shaken, has been entirely rehabili-

* The railway company has lately ceded the lands which were coming to it, according to the contract, to a new company—River Plate Trust and Loan Agency Co.—which will undertake their exploitation with briefer delay than could the company itself.

The *diminution* of the public debt for the past four years is established by the following table:

1885, public debt (int. and ext.)	\$18,523,380 66
1889, " "	12,917,036 53
Decrease	5,606,344 13

The *movement* of the public funds has been centered in a private institution, the *Union Bank*, which assumes the character of a national bank. This institution receives a commission of $\frac{1}{4}$ per cent. for its labors. This arrangement is advantageous for the nation, since it obviates a force of fiscal employés, whose salaries would certainly prove a considerable expense.

4. *Moneys, Weights, and Measures.*—The money in general use in Costa Rica is the paper dollar. Its value is nominally one hundred cents, five francs, or four English shillings, but in reality it is worth only about 70 cents, 3.50 francs, 2 shillings 10 pence, gold being at a premium of from 30 to 50 per cent. There exists a certain amount of old government bills; but, as we have said above, they diminish every year, and those in circulation to-day are nearly all issued by the Union Bank. This institution has the monopoly of fiduciary issue for a sum four times the amount of its metallic reserve. The paper money is accepted throughout all the Republic without question, and the silver money of the country has no premium over it. The bills of highest denomination are those of \$100; the smallest is of one dollar.

The divisional money is silver, and is struck off in the country. There are 50, 25, 10, and 5 cent pieces. Their assay is 750 thousandths. The gold coined up to 1876 is, to-day, almost impossible to find; it has nearly all gone out of the country.

The decimal system of money was adopted in 1863.

The customary *interest* on money of 12 per cent. some years back is now reduced to 9 per cent. Beside the Union Bank, to which is due chiefly this reduction of rate of interest, one can hardly mention other financial establishment than the Anglo-Costarricense Bank, whose affairs have been very prosperous, but whose operations have diminished of late.

The metric system of weights and measures was adopted in 1884, and has been put in practice since July first of 1886. As the old system is, however, often employed as yet, we believe it well to give here the names and equivalents of the principal weights and measures of the country:

a.) *Weights.*—The Costa Rican pound is the Spanish pound of 460 grammes. Twenty-five pounds make one ar-

roba, and four *arrobas* one quintal, the latter weighing but 46 kilogrammes.

b.) *Measures of Capacity*.—The greatest measure of capacity is the *fanega*, which contains almost exactly four hectolitres (a little over 88 gallons). It is divided into 24 *cajuelas* of 16.66 litres (27.32 quarts) each. The *cuartillo* is the fourth part of the *cajuela*, about 4.165 litres (7.08 quarts).

c.) *Long Measure*.—The Costa Rican *vara* is nearly the same as the English yard. It is divided into 36 inches. The league equals 20,000 Spanish feet.

d.) *Square Measure*.—The measure in general use is the *manzana*, which has 10,000 square yards. In measuring great extents of land the *caballeria*, containing 64½ *manzanas*, is employed.

All these weights and measures are employed daily, especially in the country. As is the case everywhere, it will be only after a generation at least that the metric system, which alone is taught in the schools to-day, will prevail and the old system and old denominations be abandoned.*

* Abundant details as to weights and measures will be found in Calvo's *Costa Rica* (edited by L. Tyner), which we have already alluded to.

CHAPTER VI.

THE FUTURE.

We have endeavored in the preceding chapters to present facts, and we have done so conscientiously and in all truth. It does not seem to us out of place to draw therefrom some practical conclusions. Our work has a double purpose: on one hand to dissipate certain geographical and scientific errors, as well as certain errors of judgment, respecting Costa Rica; on the other, to attract the attention of European and American emigrants to this as yet little known Republic.

Although the picture that we have sought to draw of the country and its inhabitants remains perforce unfinished, is perhaps no more than a faint sketch, we do not feel obliged to dwell upon this fact. We have attempted above all to be just; that is, to make known Costa Rica as she is to-day. With that view we have drawn from the best sources; we have even verified the greater part of the information furnished us. Our estimates and opinions, which we give as authentic, are the results of experience acquired by spending considerable time in the country. The study of Costa Rica remains yet to be made; it will not be for some years that sufficient material will have accumulated to compose a complete work. We claim for our part only the modest merit of having, after others, driven a new stake in the line of a road which is yet to be opened.

The question of immigration is too important for us to neglect placing in a clearer light some of the conclusions which should result from the facts shown in the course of this study.

"Of all social phenomena, emigration is the one conforming most to the order of nature, the one most lasting in all periods of history. It is as natural to mankind," says Burke

"to flock to countries that are rich and suitable to industry, where for any reason the population is scarce, as it is natural for compressed air to rush into the *couches* of rarefied air."* This passage, which we borrow from the savant-economist, M. Paul Leroy Beaulieu, and wherein is found quoted a famous name, politically speaking, expresses a thought which no one disputes to-day. For the greater number of European countries emigration is not only a fact but an annual necessity; it is the judicious depletion to prevent plethora. The tide of emigration from the old world follows in the march of humanity; it takes a westward direction.

Beyond the Atlantic two vast continents, known to the greater part of mankind only for the past four centuries, offer as yet, an immense unoccupied area, as well as incalculable wealth. The tide which has varied in form and intensity, in different periods, has at present two principal impulses: one proceeds due west and breaks in waves of population over the United States; the other, more recent, slants southward and enters the estuary of the Rio de la Plata, whence it spreads over the Argentine Republic. In the first centuries following the discovery of America, the tide of emigration was otherwise. It directed itself alone to the Archipelago of the Antilles, and thence radiated over the regions comprised between the two tropics.

The present change of course is easily explained. That which the great mass of emigrants of the sixteenth and seventeenth centuries sought in America was rapid fortune; it was the gold-mine which enabled them to return to Europe rich after a few years, and to end their days in their native land. What the emigrant of to-day desires is a bit of land on which to build a house, and fields to sow; not sudden fortune but tranquil ease, forgetfulness of the misery and the terrible struggle for existence; in short, peace and quiet in the bosom of a new country. It is understood that, under

* From "*Colonisation chez les peuples modernes*," by M. Paul Leroy-Beaulieu, page 467. Paris, Guillaumin et Cie.

these circumstances, the European betakes himself by preference to the temperate regions to the north and to the south of the tropics. It is natural, since they, moreover, recall to him the country he has left and obviate his passing through somewhat difficult acclimatization. It is also natural, since, being formerly reputed less rich in precious metals, they were less populated than the tropical regions, and offered wider field for colonization.

However, the present is a critical moment. The United States and the Argentine Republic begin, in spite of their immense still unoccupied territories, to be over populated in certain localities. There is already opposition raised in these two countries to the flood of emigration. Hindered in its march, the latter is obliged to seek another route than that which it has followed so long. Whither will it direct itself? We believe the moment has arrived for it to resume its earliest course. The Spanish-American countries have lost their Eldorado reputation, but they have lost naught of their fertility. They will always have the true wealth, that of the soil unceasingly productive. Immense regions await only the shovel and the pick-axe in order to produce not the *treasures* that have been demanded of them for a long time, but abundant reaping, not of gold, but of golden harvests.

Among all the Latin Republics of America *Costa Rica* occupies certainly one of the first places, if one class them according to the advantages and resources offered by each to immigration.

Few countries have a brighter future in the distance. The climate is salubrious, temperate, and to be likened to a perpetual spring. The fertility of the soil has yielded the present wealth and gives further assurance of it. Its position is certainly advantageous. The smallness of its population will enable it to welcome strangers for a long time, not as a burden, but as a blessing.

Where, indeed, could be found a better spot for immigration and the fruitful employment of foreign capital? The agriculture demands laborers, demands them loudly, and

the more that respond the sooner it will prove the source of wealth for not merely a few, but for the entire country. The lands not yet cleared are vast, of recognized fertility, and their low price places them within reach of the smallest capital. For those who will improve them they will cost only the labor of the improving. Those who work at trades are sure of high wages. The industrial field has wide range. Various industries might be introduced with profit into the country. The development of those already begun would show admirable results. Capital yields at least double as much as in England, if one consider alone the rate of interest. This yield is much more considerable if one consider the income from lands, the earnings of commerce, or of industries.

Much is said in Europe, it is true, of the instability of the governments and the insecurity of affairs in the Spanish-American Republics. This is an erroneous idea, as far as Costa Rica is concerned. The country has hardly known revolutions. It is wisely governed to-day. Its financial condition is prosperous, and the state of civilization at which it has arrived places it beyond any retrogression. All the countries of Central America, from the Isthmus of Panamá to Mexico, are represented, besides, as extremely insalubrious. This is wholly false. Costa Rica is neither Panamá nor the Mosquito Coast. The climate is, on the contrary, as we have already repeated several times, perfectly healthful and temperate rather than hot. If there be, as there are everywhere, unhealthful regions, these will be rendered healthful by clearing and improvement; and, besides, the lands to be disposed of are so vast, that for a long time yet, the immigrant will not need to establish himself in a locality not entirely satisfactory to him. A third great error, too widely spread and one which we have strenuously sought to combat, consists in the belief that the country is still half sunk in ignorance and barbarism. This is absolutely untrue. The aspect of the cities, the character of the inhabitants, the condition of public instruction, the government's adminis-

trative wisdom, and the development of commerce are a proof of it. Europe no longer has a monopoly of civilization. True, the light has proceeded from her, but the torch now blazes in many regions once submerged in shadow, and Costa Rica may well boast of having in a few years arrived at an enviable degree of culture.

Two other serious objections may be raised against emigration to Costa Rica, but these are not as insurmountable as they might appear at first view. The first is the dearness of living; the second may rise from the recollection of unfortunate attempts at colonization, made formerly under deplorable conditions. The first objection is easily conquered. Living is dear in Costa Rica, it is true; but this dearness is compensated by the rate of wages. Living is dear because the country is rich; one need not go deep into political economy in order to prove it; the United States will enable us to dispense with inopportune demonstrations. Besides, not everything is dear. The stranger arriving in the country should seek to habituate himself promptly to the manner of living there. That which is expensive is the attempt to preserve intact the usages of European or North American life. The immigrant from Europe ought to be wise enough to endure some privations, which would only be such until he had become used to them. He would do well, for instance, to give up the wine which he drinks in France or the beer which costs him almost nothing in Germany. Beans will supply the place of potatoes in his ordinary food. But are these grave inconveniences? We think not, and we should not have spoken of such elementary rules of conduct had not experience taught us at various times that it was necessary to insist upon this point.

From the fact that various attempts made at colonizing Costa Rica have not resulted as was expected by those who have undertaken them, it should not be deduced that emigration is not to be advised. The best of enterprises badly conducted may prove disastrous. Far from us the wish to cast a stone at those who made the first attempts at establishing

foreign colonies in Costa Rica. These attempts were made some time since, and the country was not certainly twenty or thirty years back of what it is to-day. They were obliged, therefore, to struggle with obstacles which have since disappeared. We believe, however, that if the projects had been better matured and the ground better studied, one need not have had failures to regret. It is a great mistake—unfortunately one too common—to believe that colonies may be founded at a single attempt. One should not expect, in Costa Rica any more than elsewhere, to see towns and villages rise as by enchantment in places that formerly were deserts. Only under certain exceptional circumstances—the affluence of the population in region of gold mines, for example—have permitted such marvels. Colonies have almost always humble beginnings. Lands are cleared slowly. There must be a first sowing and reaping of that wherewith to sustain the life of a certain number of individuals, in order that a group may gather and the colony be formed without fear of perishing in misery. In the exceptional case that we have cited above, the immigrants have bought their first supplies at extremely high prices; but the farmer colonists are always poor on their arrival. They can only count upon their daily toil. While waiting until the forest shall be laid low, the seeds sown, the first grain of wheat or ear of corn to be harvested, what shall they live upon? What shall they live upon, far from other men's habitations, in regions as yet hardly more than deserts, where food cannot be brought save with greatest difficulty? They will suffer a thousand ills. They will lose the hope and confidence with which they were armed at the beginning, and disgusted with toil, sighing after their former condition, of which they remember only the brightest side, they will one after another abandon their wearisome undertaking. This is the explanation of what has occurred in Costa Rica and what will occur again if emigration be attempted under the same conditions. One should not think of transplanting whole colonies, unless to lands prepared a long time in advance, already put

in process of culture to some degree, and in a way to produce food for the first needs of the new-comers.

Costa Rica, nevertheless, desires immigration. We have shown above that it is a necessity for the country, and in any case a condition on which depends her future prosperity. Speaking of colonies, the economist whom we have already quoted says: "The only immigrants of advantage to a colony are strong young men full of courage and patience; the English enquiries have proven that under sixteen and over forty, immigration is rather a tax upon than a resource for colonies."* Although it may not be a question here of metropolis and colony, we maintain fully the opinion which we have just quoted. What is wanted in Costa Rica is young men, or grown men, so long as they do not pass a certain age; but they must be *strong, full of courage and of patience*. A common enough error among emigrants is the belief that life will be easier for them in every way in countries beyond the sea. We do not hesitate to say that it is often harder at the outset. America offers this advantage, that the toil is more fruitful, more remunerative, and that, the first difficulties overcome, ease is more speedily obtainable. But it is not obtained without exertion; strength is necessary, and courage and perseverance.

Yet another thing is necessary. The feeble individual, the coward, or the unsteady man will not make his living; he who can do nothing will not succeed. Costa Rica is a new country, but it is also a country which is progressing constantly. It is required of the foreigner not only that he *work well*, but that he *work* better than the native. He is made to repay the hospitality which is generously accorded him, in lessons. If he be a good artisan, good farmer, or good manufacturer, his merit will be promptly recognized; if he work badly, or even but ordinarily, they will turn away from him, and not without reason. It is well, moreover, to have more than one string to one's bow. In a coun-

* P. Leroy-Beaulieu, work mentioned, p. 481.

try where labor is scarce, one is sometimes obliged to turn his hand to anything. No one can really count on other than his own *intelligence and powers*.

Despite all advantages which may be offered him, the immigrant should not arrive absolutely without resources. Whatever may be the work that he has in view, he will naturally stand in need of funds for establishing himself. He will require these also while waiting for his first earnings, if he does not wish to be dependent on others or to begin by contracting debts which it will take him a long while to get free of. In any event, a small capital will assure him independence; the entire lack of personal resources will prevent him from gaining this for a long time.

The best immigration, then, does not include the feeble, the utterly poverty-stricken. Such will not succeed in Costa Rica. The strong, the persevering, the skillful—those who possess some resources—have their future there assured. Above all, are required good *agriculturists, artisans good at their trades*, and industrial workmen capable of themselves of undertaking the thousand little productive industries which are yet lacking in the country.

Countries which have called for immigration have always taken measures to aid the immigrants. Costa Rica does not intend to be behind the others in this respect. In proof of the assistance we may cite the following fact: At the close of the year 1888, over a thousand Italians, engaged at work on the line of railroad in construction, abandoned work and demanded to be returned to their own country.* Desirous of retaining a part, at least, of this immigration

* It is not for us to judge of the differences between the railroad company and the Italians who had been engaged for the works. We may say, however, that no one of them had the slightest occasion for complaint in regard to the people of Costa Rica, who succored and harbored them for many weeks with a kindness worthy of praise. Various European journals published correspondence casting the entire blame of the laborers' misfortunes—the sad consequence of their abandoning work—upon the country. As ocular witness of the occurrences, we believe it our duty to formally deny these untruthful stories, which prove only the ingratitude of their authors.

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